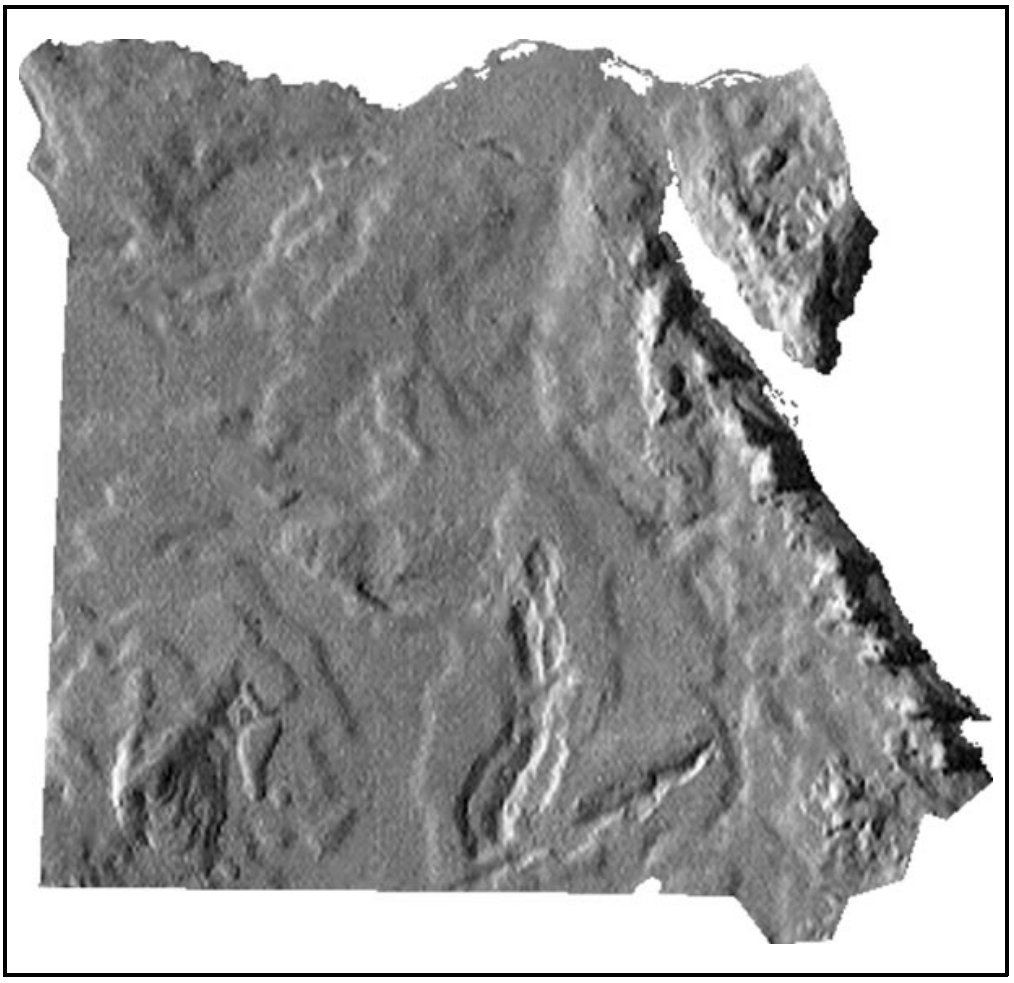
Health Budget Tracking System

Phase I: Final Report



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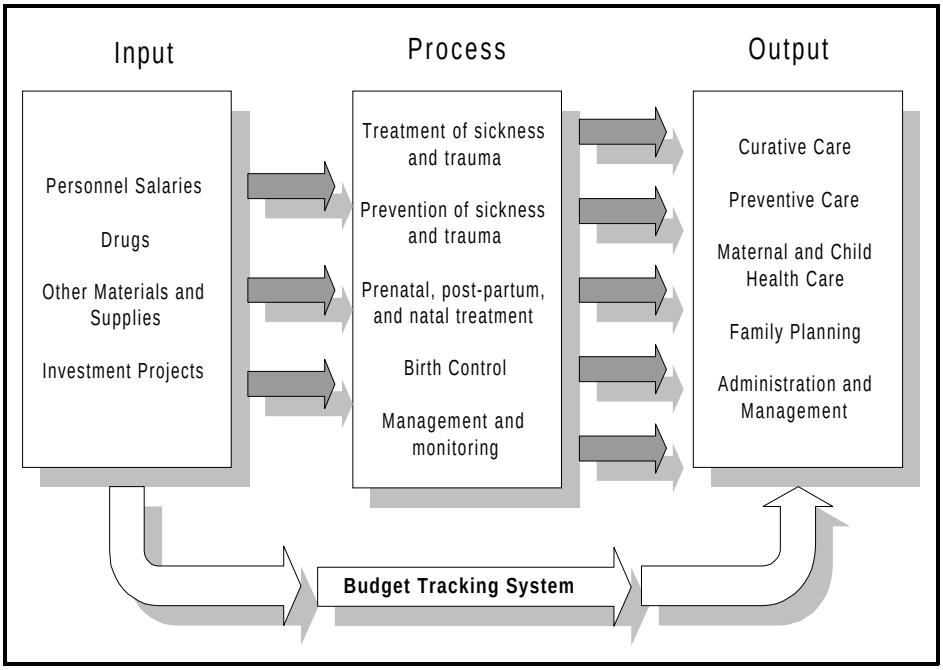
1 Introduction

Allocation of resources based on reliable information is important to any undertaking. Government health services in Egypt are no exception. Detailed and accurate data are critical to Ministry of Health (MOH) efforts to develop an informed public health policy and to track the effects of policy changes. As illustrated in Figure 1, government expenditures for salaries, drugs, other materials, and investment projects are input to the processes that provide different kinds of health care. Official accounting line items normally track input, but do not track expenditures in terms of output. At the beginning of the Data for Decision Making (DDM) project, the MOH had no accurate information on the proportion of government funds spent on various kinds of health care facilities and various types of health care. No information was available to compare expenditure patterns among administrative units.

Figure 1 *The relationship between expenditures and delivery of different kinds of health care.*



A health Budget Tracking System (BTS) is being developed to meet these information needs. Construction of the BTS is one of several activities under the USAID-funded DDM project in Egypt. The primary goal of this activity is to monitor government health expenditures according to several categorization systems. Other DDM activities in Egypt have been undertaken to provide detailed information on all public and private health care expenditures and on the cost of specific treatments.

The BTS activity is targeted at designing, developing, and institutionalizing a computerized budget tracking system for the MOH and the governorate health directorates. The BTS will allow the Ministry to monitor total Government of Egypt (GOE) expenditures on health services by official budget accounting categories as well as functional health care categories. The BTS will be consistent with the existing GOE budgeting and accounting practices at the central and governorate levels.

Development of the BTS has been divided into two phases. Phase I, described in this report, has successfully defined a system for collecting and classifying expenditures by health care function for individual health care units. This system was developed and tested in three pilot governorates: Alexandria, Beni Suef, and Suez. For the first time, the MOH has complete and accurate information on health care expenditures by function for three representative governorates. Phase II, currently under way, is designed to integrate the BTS with the Health Information System designed under the USAID-funded Child Survival Project, develop standardized forms and data collection procedures, automate drug inventory control and personnel/payroll systems, and expand the system to additional governorates.

2 Objectives

The objective of the budget tracking system activity is to develop a sustainable system for collecting and classifying GOE health expenditures. Though it is called a *budget* tracking system, the Directorate of Planning (DOP) is interested in tracking actual *expenditures* by function, not budget allocations. They want to know the answers to the following questions:

- How much money is being spent on salaries, drugs, administration, and hospitals?
- How much money is being spent on preventive care, primary care, curative care, and family planning?
- How do expenditure patterns vary within each type of health care facility?
- How do expenditure patterns vary among districts and governorates?

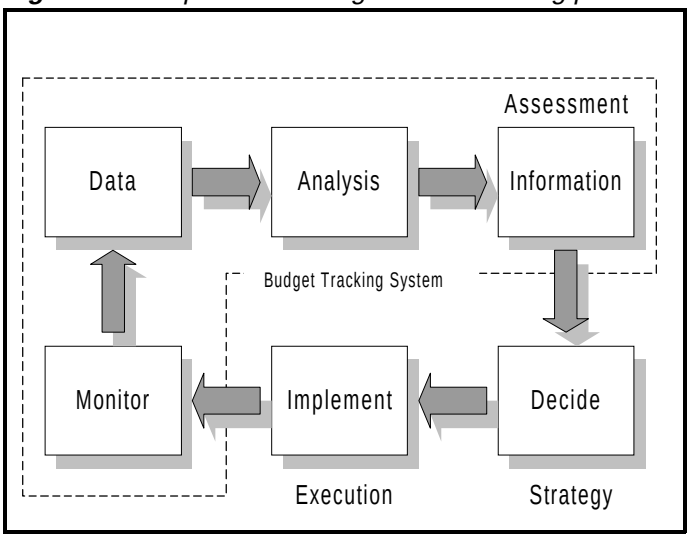
At the beginning of this activity, there was no information available that would answer these questions.

Figure 2 is a common diagram of a learning process. The information necessary to improve decisions made in the strategic planning is provided by a monitoring system. The DOP currently has no monitoring system that can provide information on how input expenditures relate to broad health care functions and, more specifically, to health care outcomes. The BTS can meet this need.

The main function of the DOP has been to evaluate funding requests for investment projects submitted to the Ministry of Finance (MOF) by governorate planning offices. DDM activities, including the BTS, have been aimed at strengthening the DOP's ability to meet MOH planning and policy analysis needs. Strengthening planning and management at the governorate level is also important as governorate health directorates make most operational decisions.

The DOP is primarily interested in evaluating the general allocation of expenditures among broadly defined health care functions. Results should also be useful for evaluating the distribution of expenditures among governorates, districts, and health care units. This means that expenditure information must be collected annually from each health care facility. The MOH needs this information every year to monitor changes in expenditure patterns over time. The same classification system must be used each year so that results can be compared. Results must be available to the health directorate in each governorate. It should also be possible for the DOP to consolidate results from all governorates.

Figure 2 *A simplified flow diagram of a learning process.*



Specifically, the system should

- provide reliable and reasonably accurate information about how much money is being spent on various general kinds of health care in each facility, district, and governorate;
- support health care planning at the governorate level;
- make it possible for personnel in the governorates to collect and classify the data; and
- make it possible to repeat the exercise each year to allow comparison of results over time.

3 Technical Approach

We separated the activity into two major phases. Phase I concentrated on the following tasks:

- develop a simple system for classification of expenditures by function,
- collect and classify data from several pilot governorates,
- develop software for managing the data and viewing the results, and
- conduct a workshop to present and discuss the results with counterparts.

Phase II will concentrate on applying lessons learned in Phase I to the following tasks:

- develop a sustainable system for collecting, classifying, and processing the data,
- integrate the BTS into the design of the Health Information System (HIS),
- expand application of the BTS to more governorates, and
- develop executive information system software to view and analyze the results.

We hoped information collected and lessons learned in Phase I would provide us what we needed to complete construction of a sustainable system in Phase II. The first task in Phase I was to construct a system for classifying expenditures by medical function. After developing a classification system, we tested it by determining where the necessary expenditure data are maintained in the system, and whether they are maintained in a way that allows them to be classified clearly. We expected that some changes might be necessary in official forms and reporting procedures to institutionalize the system and make it sustainable. We needed to gauge the availability of data and the extent of the necessary changes before investing in Phase II.

While collecting and classifying the data, we developed a computer software application to manage the data and display the results. Early construction of this software provided valuable information for building a more complete and sustainable system in Phase II.

4 Classification System

There are many useful ways to classify expenditures. They can be classified by official budget categories, by type of health care unit (hospital, rural health unit, etc.); by location (urban-rural, district, governorate, etc.); by medical function; and in other ways. Each classification reveals some useful information.

4.1 Official Budget Categories

Classifying expenditures by official budget categories is fairly simple because they are recorded this way officially. The official budget categories are as follows:

- Bab I . . . Salaries
- Bab II . . . Drugs and Other Materials and Supplies
- Bab III . . Capital Investments
- Bab IV . . Transfers, Grants, and Loan Payments.

These same four categories are used throughout the administration from top to bottom for cost accounting.

For the purposes of the BTS, Bab II was separated into two categories:

- Bab II . . . Drugs
- Bab II . . . Other Materials and Supplies.

“Drugs” is used here to include the following:

- pharmaceuticals (pills, injections, syrups, antidotes, etc.);
- syringes;
- vaccines;
- family planning materials (pills, loops, condoms, etc.);
- chemicals for laboratories;

- materials for blood banks (blood plasma, blood bags, etc.); and
- chemicals for vector control (malaria, bilharzias, etc.).

“Other Materials and Supplies” includes the following:

- utilities (electricity, water, benzene or gas);
- office supplies (paper, pencils, etc.);
- food for patients; and
- routine maintenance materials (paint, wood, etc.).

This separation provides useful information for planning. It is also easy to make, because different administrative divisions in the governorates are responsible for control of these two basic kinds of consumable supplies.

4.2 Health Care Function Categories

One of the most useful ways to classify expenditures is by health care function. As is normally the case, the official budget categories are not useful for evaluating how much money is being spent on various types of health care. The first task in Phase I was to develop definitions for health care function categories. The BTS functional classification system was designed to meet the following requirements:

- It must be useful for planning and monitoring.
- It must be possible to use the same classification system each year.
- The classification system must be clear and simple.
- The same classification system must be used officially by all governorates.
- The classification system must be documented.

As described in RTI 5875-001-001 (Schwartz and Cressman, Trip Report, 4 February 1994), a series of discussions were held with the Directorate of Planning to determine the health care function categories. We concluded that classifying all government health care expenditures by the following five functional categories would be most useful to MOH planning efforts:

- Curative Health Care
- Preventive Health Care
- Primary Health Care
- Family Planning
- Administrative.

Funds expended in an effort to treat patients already afflicted with some injury, sickness, or disease are classified as "Curative." Funds expended in an effort to prevent injury, sickness, or disease are classified as "Preventive." Funds spent in treatment of women before or shortly after childbirth, and funds spend in the treatment of young children, are classified as "Primary," meaning maternal and child health care. Funds spent in an effort to encourage planned births are classified as "Family Planning." Funds spent on staff or materials that have no direct contact with

patients and are not directly involved in health care in any of the other four categories are classified as "Administrative." Table 1 lists the formal definition of each of these categories.

Table 3 *The definitions of the function categories.*

Function	Description
Curative	Funds expended in an effort to diagnose, treat, and follow up with patients afflicted with some injury, sickness, or disease are classified as "Curative." Curative care deals with people who are not well.
Preventive	Funds expended in an effort to prevent injury, sickness, or disease are classified as "Preventive." Preventive care means trying to prevent people from having a condition that they do not already have.
Primary or MCH	Funds spent in monitoring pregnant women before and shortly after childbirth (prenatal, delivery, postnatal) and funds spent in the treatment of children less than five years of age are classified as "Primary or Maternal and Child Health (MCH)."
Family Planning	Funds spent in an effort to encourage planned births are classified as "Family Planning." Family planning includes education efforts, distribution of contraceptives, monitoring of users, and other related activities.
Administrative	Funds spent on staff or materials that have no direct contact with patients and are not directly involved in health care in any of the other four categories are classified as "Administrative." Administrative expenditures have no direct influence on the health of patients. They are not directly involved in treating patients or directly aimed at preventing sickness, injury, or disease. Administrative expenditures are intended to manage and support activities in the other four functional categories.

We recognize there are many cases in which the classification of expenditures into one or the other of these categories is arguable. To measure any changes in the expenditure of funds according to these categories over any period of time, it is necessary to be completely consistent in classification. This requires development of a simple, clear set of rules and procedures for collecting these data and classifying them. These procedures should also minimize variation between data collectors and should strike an appropriate balance between accuracy and effort. Development of this protocol has been a major part of this pilot study.

A separate DDM report, *Classification of Health Care Expenditures by Function* (RTI-5875-001-003) describes the BTS function categories in detail and provides guidelines used to assign expenditures to these categories. Table 2 summarizes the expenditure classification system. The following sections describe work under Phase I to apply this system of classification to 3 of the 27 governorates.

Table 4 *A summary of the expenditure classification system.*

CHAPTER OF BUDGET	TYPE OF UNIT		
	Single Function	**Hospital**	**Combined or Multifunction**
Bab I - Salaries	by function of unit	by job of person	by job of person and use of time
Bab II - Drugs	by function and use of drug or material	by function and use of drug or material	by function and use of drug or material
Bab II - Other Materials and Supplies	by function and use of material	by function and use of material	by function and use of material
Bab III - Investments	by purpose of project or function distribution of units receiving the investment		
Bab IV - Grants, loan payments, transfers	not classified by function		

5 Collecting and Classifying Data

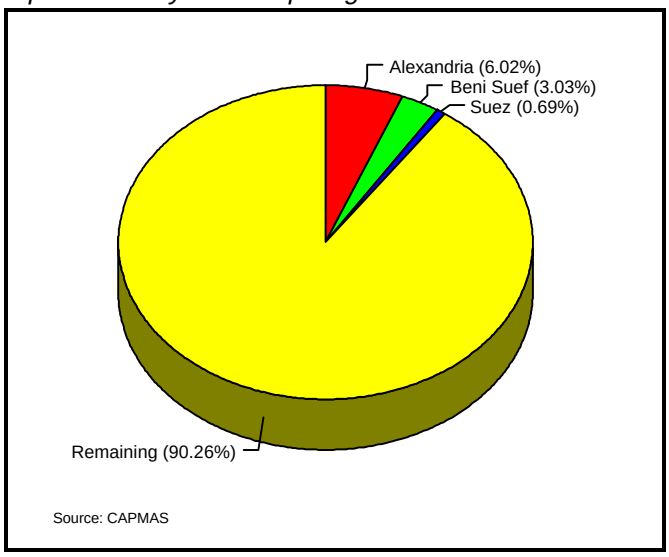
5.1 Objectives

We set out to collect information on all expenditures in all four official budget categories for all of the selected governorates. Expenditure data were collected for the 1992/1993 Fiscal Year, since that was the most recent complete year of data available at the beginning of Phase I. Accurate classification of expenditures into the five function categories defined for the BTS required additional information, such as the type of health care unit, a person's job, how a person normally spends his/her time, and the use of a particular drug or type of medical material in the context of the type of health care unit. Our purpose was to determine whether the information necessary to classify expenditures by function was available, locate the highest administrative level at which it could be found, identify necessary changes in official reporting procedures, and evaluate chances for institutionalizing the system in the governorates.

5.2 Selecting Pilot Governorates

Three pilot governorates were chosen by the DDM team in consultation with the DOP. These were Beni Suef, Suez, and Alexandria. Three was considered to be a manageable number for the DDM team, while providing enough information to test the classification and collection systems. The three pilot governorates were chosen to represent three major types: a largely rural Nile Valley governorate (Beni Suef), a small governorate including a major Suez Canal port (Suez), and a large urban governorate (Alexandria). As shown in Figure 3, these three governorates combined account for nearly 10 percent of the population of Egypt, according to

Figure 3 *Proportion of total 1992 - 1993 population represented by Phase I pilot governorates.*



1992 and 1993 population statistics from the Central Authority for Population, Mobilization, and Statistics (CAPMAS). By examining these three governorates, we hoped to derive a structure and sampling protocol suitable for the other 23 governorates.

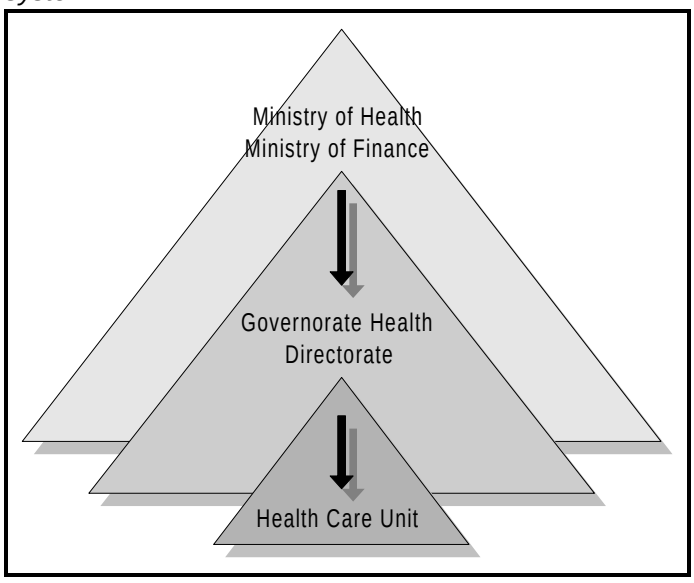
Reconnaissance visits were made to each of these governorates to determine whether they would welcome and cooperate with the project and to assess the availability of the necessary data. All three of the selected governorates were prepared to participate in the activity. Ismailia was also considered for inclusion as a pilot governorate, but the reconnaissance visit encountered resistance to cooperation with the project.

5.3 Identifying Sources of Data

We began by identifying major administrative layers in the system. As shown in Figure 4, these include the central ministries of health and finance, the governorate health directorate, and the individual health care units. In many governorates, there is a district markaz administrative level immediately below the central Health Directorate.

As in most government ministries, funds are allocated from the top down, and information on actual expenditures is reported from the bottom up. We examined official records and reporting procedures at each level, beginning from the top down, to determine the highest point in the system at which routine reporting requirements provided the

Figure 4 *Allocation of funds down through major administrative layers of the government health care system.*



information necessary to classify expenditures by the defined health care functions.

Centrally, we examined expenditure data available in the Directorate of Planning, other parts of the Ministry of Health, including projects such as the Family Planning Project, and the Ministry of Finance. In each governorate, we determined what expenditure information was available in the Directorate Office, accounting department, central pharmaceutical store, central vaccine refrigerator, medical supply department, planning department, and preventive department. In districts, we investigated the director's office, accounting department, and pharmaceutical store. We examined every type of individual health care unit, including general, central, and specialized hospitals, ambulance, quarantine, and disease control units, central blood bank, central laboratory, separate health office, maternal and child health center rural health unit, health group, rural hospital and urban health center.

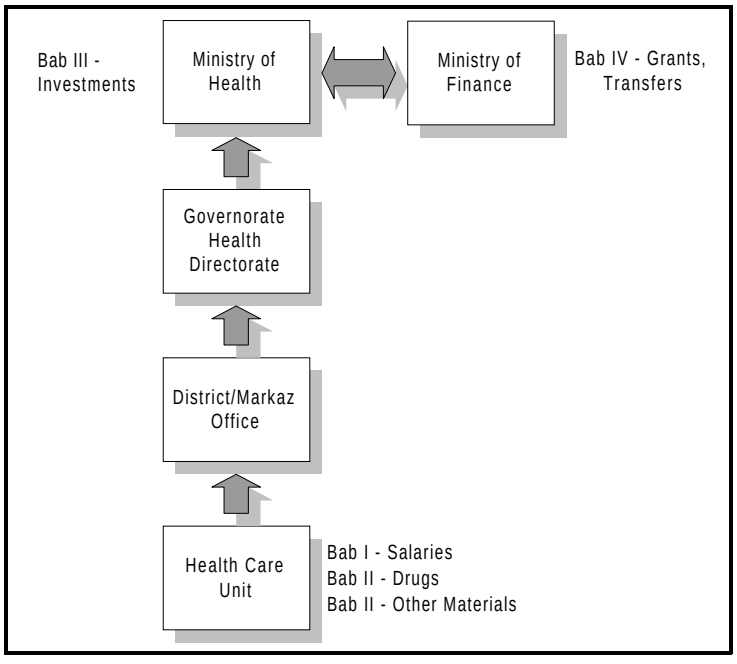
Expenditure records are maintained at all levels according to the major official accounting categories described in Section 4. In many cases, we found the same expenditure data available in different administrative offices. As might be expected, information necessary to classify expenditures by function is lost as data are aggregated for reporting to higher administrative levels. For example, information on consumption of drugs and medical materials is available in the central pharmacy, but records do not show which specific health care facilities consumed them. For each of the official budget categories, we collected expenditure data from the highest administrative level able to provide the information necessary to classify the data by function. The purpose was to minimize creation of additional data collection forms, simplify the system, and improve chances for sustainability.

Figure 5 shows the category of expenditure data collected at each major administrative level. Expenditures for the following budget categories were collected from individual health care units:

- Bab I - Salaries
- Bab II - Drugs
- Bab III - Other Materials and Supplies.

Bab I expenditures (salaries and benefits) are available at each administrative level. Salaries for medical personnel in some units could only be classified by function by collecting information from each health care unit about how these persons allocated their time. Bab II expenditures (drugs and other materials and supplies) are also

Figure 5 *Sources of expenditure data by major administrative level.*



available at every level in the system. Due to current recording and reporting procedures, it was necessary to collect Bab II data from individual health care units. This is described in more detail in Section 5.5.1.

The following budget categories were collected from the Directorate of Planning of the Ministry of Health, or the Ministry of Finance:

- Bab III - Investments
- Bab IV - Grants, loan payments, fund transfers.

The Directorate of Planning of the Ministry of Health can provide accurate Bab III expenditures by project for each governorate. This same information is available in the planning office of each governorate health directorate. The records indicate which units in the governorate are affected by each project. This information was sufficient to categorize these expenditures by function. Accurate information about Bab IV (grants, loan payments, and fund transfers) is available from the Ministry of Finance. Bab IV is a "holding" account. It is not used for current expenditures, thus it is included for completeness only. It is not used in any statistics dealing with current expenditures. Table 3 lists the primary and secondary sources of data for each major budget category.

Table 8 *Primary and secondary sources of data by major budget category.*

Budget Category	Primary Source of Data	Secondary Sources of Data
Bab I - Salaries	Individual units	Governorate General Accounting Office, Ministry of Finance
Bab II - Drugs	Individual units	Governorate Central Pharmacy
Bab II - Other Materials and Supplies	Individual units	Governorate Central Stores
Bab III - Investments	Governorate General Accounting Office	Governorate Health Planning Office. Directorate of Planning/ Ministry of Health, Ministry of Finance
Bab IV - Transfers, Loans, Grants	Governorate General Accounting Office	Ministry of Finance

5.4 Analyzing Governorate Administrative Structures

The first task in each governorate was to get an accurate organizational diagram of the Health Directorate. Some governorates had current diagrams, while others had to be brought up to date

or drawn based on information provided by the Health Directorate Office. Annex A contains organizational diagrams for each of the three pilot governorates. These show that there is no standard organization for governorate health directorates. Organization varies according to the needs of the governorate, political forces at work within the directorate, and the organizational ideas of the Director.

Each governorate's administration of health services can be divided into two major branches: service departments and medical departments. Medical departments are normally further divided into a curative department, a preventive department, a rural or basic health care department, and individual services such as ambulance and emergency.

The diagrams in Annex A also show that the title of a department does not necessarily indicate the major function of all health care units under its direction. For example, data collection in Phase I determined that fever hospitals are curative. However, in Beni Suef, Suez, and Alexandria, fever hospitals are under the administration of the "Preventive Department" or the "General Directorate of Preventive and Basic Health." In Beni Suef, Urban Health Centers are under the administrative control of the "Rural Department." Annex A includes a diagram for each governorate classifying each type of health care unit according to the five health care categories used by the BTS.

5.5 Collecting Data

In each governorate, one or more visits were made to the Health Directorate Office to explain the purpose of the BTS to the Director and managers of key departments. At the request of the DDM Team, one principal counterpart was appointed by each Director to coordinate data collection efforts. Leading members of the DDM Team responsible for data collection were all qualified public health professionals. Dr. Mahmoud Abdel Latif, the primary BTS investigator, has significant experience working as a medical doctor in every level of the government health care system. Dr. Samir Fouad, who collected most of the data for Alexandria and is currently DDM Project Coordinator in Egypt, also has significant experience working in government health care units.

Data collection in Beni Suef, the first of the three pilot governorates, began on 13 November 1993. A total of 11 visits were made to that governorate through June 1994. Dr. Mahmoud Abdel Latif was the primary investigator and conducted all of these visits. Mr. Cressman accompanied him on two of these trips and Dr. Mohamed Mahzangy accompanied him on several other visits. Additional visits were made to Beni Suef over the remainder of Phase I by various members of the team to clarify some issues raised by collection activities in the other two governorates. Data collection in Suez began in June of 1994 and continued through July of 1995. Most data collection in Alexandria was done between August of 1994 and February of 1995.

Questions raised by data collection in Alexandria caused the DDM Team to recheck results in all three governorates to ensure that collection and classification methods were comparable and potential sources of information were not missed. Throughout Phase I, data classification was checked and rechecked. Data from each governorate were compared to results from the other

two. Repeated visits were made to the pilot governorates to resolve questions raised during analysis and classification of the data.

No standard forms were used to collect the data. Instead, DDM Team members visited each unit to determine what information was available and who was responsible for maintaining it. Team members met with the appropriate persons in each unit and gave them of a list of information needed. DDM Team members explained the purpose of the BTS to governorate counterparts and discussed the availability of the necessary expenditure data with them. Standard data collection forms were developed using computers provided to the DOP by the Project. These forms were developed based on early experience in Phase I, but were not used by the DDM Team. Team members felt it was more efficient at this stage of development to continue use of forms created as needed by governorate counterparts or DDM Team members.

In some cases, data were readily available from existing forms on record. In most cases, this information was not organized in a way that made it easy to produce the necessary figures. In this case, the clerk or manager, or a DDM team member, created a hand-drawn form and calculated the requested information based on existing records. Records provided by governorate clerks and managers were officially stamped and signed. Data entered on these forms were compared with original official records whenever possible and were checked by the DDM Team for reasonableness. Consolidated figures for units, districts, and governorates were compared with other official consolidated figures available at higher administrative levels. Annex B contains the detailed *Data Collection Checklist* (RTI - 5875-001-008) developed during Phase I. This provides a complete and accurate account of what data were collected from the various offices, departments, and units in each governorate.

Data were entered into the computer as they were collected and classified. The software developed to manage the data and display the results is described in Section 6. Expenditure totals for each budget category and health care function were entered into spreadsheets for individual health care units. Totals for each type of health care unit were transferred into the BTS software.

5.5.1 Medical Supply Centers

Each governorate has a central medical supply center. There is also a center for distribution of other non-medical materials and supplies. Attached to the central medical supply center is a vaccine refrigerator. This may or may not be located in the central pharmacy, but the central pharmacy manages it.

Initially, these centers appeared to be a convenient central location for collecting detailed information on drug and other materials expenditures by unit. Several visits were made to the central pharmaceutical supply centers in Beni Suef, Alexandria, and Suez to map their record-keeping system. It appeared that a simple microcomputer-based drug inventory control system might reduce waste in the supply center, as well as provide accurate information on drug distribution to the various health service units.

Vaccines are supplied to the vaccine refrigerator of the central pharmacy directory from the MOH. Vaccines and syringes are provided directly to individual health care units from the central vaccine refrigerator. The “Preventive” department of the governorate normally monitors the vaccination process. Expenditures for preventive vaccines are classified as preventive. The category of “vaccines” also includes antidotes that are curative. These are supplied through the central pharmacy and vaccine refrigerator. Expenditures for curative antidotes are classified as curative.

Each central supply center provides pharmaceuticals and medical supplies to smaller supply centers in each district or markaz. District supply centers are able to record the allocation and consumption of these materials by each health care unit. Although there is a column in the official form books to record the consumption of each unit, this is often not used. There does not appear to be any regular inventory control and auditing system at this level. Health care units normally receive their drugs and medical supplies from their district pharmaceutical supply center, but may get them directly from the central governorate supply center if they are unavailable in the district. Central supply centers record allocation and consumption of materials by district, but not by individual health care unit. Figure 6 shows the basic flow of information about consumption of drugs and medical supplies at the governorate level. This situation is mirrored by the system used for control of non-medical supplies.

Central supply centers can purchase some pharmaceuticals and medical supplies directly from suppliers. In the 1992/1993 fiscal year, the central pharmaceutical supply center in Beni Suef used about 80 percent of its budget for materials from the MOH supply. The remaining 20 percent was used to purchase materials from other sources. About half of that 20 percent goes for laboratory supplies, and the other half to materials used by units of the curative department (anesthetics, X-ray film, etc.). Of the 80 percent used to purchase materials from the MOH, about 65 percent went to hospitals and clinics, and the remaining 35 percent to various rural health service units. Of the amount used by hospitals and clinics, about 40 percent goes to the general hospital, 40 percent to specialized hospitals, 17.5 percent to the central hospitals, 0.5 percent to various out-clinics, and 2 percent to various other units.

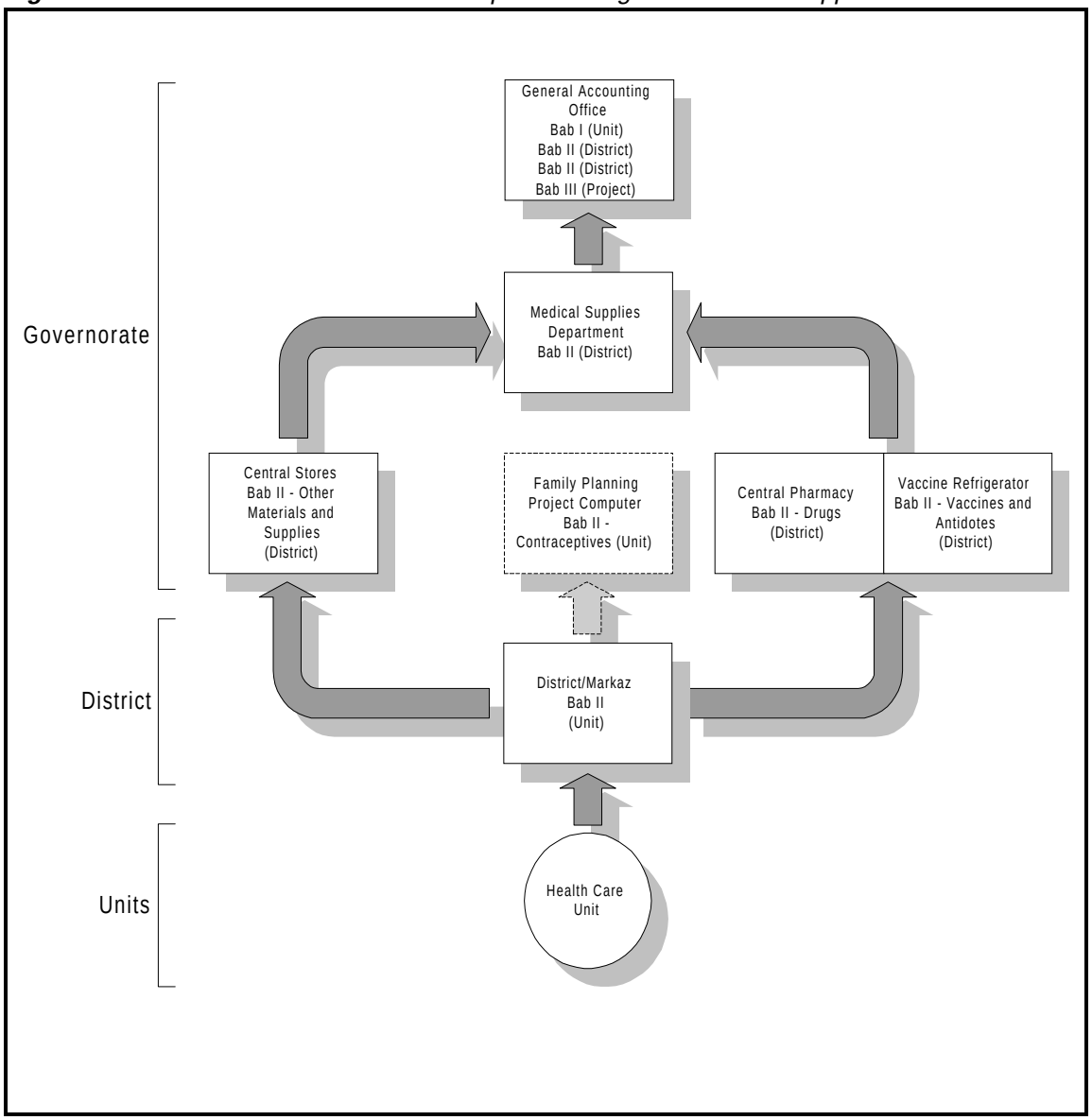
Prices paid for drugs were obtained from individual units, from the district pharmaceutical store, or from the central pharmaceutical supply center of the governorate. If accurate prices were not available from any of these sources, prices were obtained from the MOH, which negotiates prices with suppliers for most drugs and medical supplies. For the 1992/1993 fiscal year, preventive vaccines were purchased with funds from foreign grants. Prices used for vaccines and antidotes are official prices from the Vaccine Institute. Vector control chemicals (malaria, bilharzias, etc.), laboratory chemicals, and blood bank supplies are also provided directly by the MOH, and were priced using official MOH figures. Most family planning materials, leprosy treatments, and oral rehydration packets were provided by foreign grants. Prices for these materials were obtained from the Family Planning Project, official MOH prices, or prevailing market values.

5.6 Classifying Expenditures

Records of allocations are kept at all administrative levels according to the official budget categories. Allocations and expenditures are not separated in the five functional categories selected for analysis in the BTS. This section describes the basic approach taken to classify the

expenditure data by function. The complete classification methodology is detailed in the DDM report *Classification of Expenditures by Function* (RTI 5875-001-003).

Figure 6 *Flow of information about consumption of drugs and medical supplies.*



We use the term “unit” to refer to any subdivision of a governorate’s Health Directorate that provides some service. DDM Team members visited each different type of unit in each pilot governorate to determine their actual function. Early visits to Beni Suef determined that most units

could be classified into one of the five major function categories. The exception appeared to be many of the small, basic health care units. These include rural health units, health groups, rural hospitals, and urban health centers. We separated the various types of units into three major divisions. Those that essentially provide services in only one of the five health function categories are called "single-function units." We have treated hospitals as a special kind of single-function unit. Although they essentially provide curative services, they have significant administrative expenditures that we wanted to separate from other hospital expenditures. Units that provide significant services in two or more health function categories are called "multifunction" units. The following sections describe the treatment of expenditures for each major type of health care unit.

5.6.1 Single-Function Units

Single-function units include administrative offices and departments (Personnel Affairs, Accounting, Human Resources, Public Relations, etc.); curative units (ambulance, blood banks, out-clinics, dispensaries, hospitals, etc.); preventive units (health offices, quarantine, vector or disease control, etc.); primary or maternal and child health care units; and family planning units. Expenditures in these units that do not directly support the major function of the unit are minimal.

Data collected for single-function units consisted of adjusted salaries and job descriptions for all personnel; the total quantity of each type of drug and medical material consumed; and expenditures for other types of materials and supplies, such as chemicals, food, and utilities. These data were collected from all single-function units in each pilot governorate. All expenditures are totals for the 1992/1993 fiscal year. We classified all expenditures for single-function units according to the actual function of the unit.

5.6.1.1 Governorate Administration

Central governorate administration includes all administrative and support workers in the governorate administration building and all of the departments belonging to it. This includes markaz or district administrative offices (personnel, accounting, public relations, legal affairs, social affairs, training, nursing affairs, private treatment, statistical unit, planning office, financial control office, and medical or health council) and medical supplies centers. All expenditures associated with these offices have been classified as administrative.

5.6.1.2 Curative Units

Each governorate has a curative department responsible for administering general, central (district), and specialized hospitals. Classification of expenditures for hospitals is discussed in Section 5.6.2. Other health care units that may be included in the curative department include medical or health councils, private treatment offices, nursing affairs offices, nutrition, dispensaries, and general out-clinics. As with all health care units, the actual function of the unit determines how its expenditures are classified. Health care units found to provide curative services almost exclusively include hospitals, ambulance and emergency services, central blood banks, diagnostic laboratories, general out-clinics, leprosy centers, and isolation centers. All expenditures for units whose actual function is entirely curative were classified as curative.

Data collected for curative units consisted of adjusted salaries and job descriptions for all personnel; the total quantity of each type of drug and medical material; and expenditures for other types of materials and supplies, such as chemicals, food, and utilities. These data were collected from all curative units in each pilot governorate. All expenditures collected for the BTS are totals for the 1992/1993 fiscal year.

5.6.2 Hospitals

Hospitals include general hospitals, central hospitals, and specialized hospitals (fever, ophthalmic, psychiatric, endemic, etc.). Each governorate has one general hospital and several central (district) hospitals and may have a variety of specialized hospitals. Specialized hospitals include fever, ophthalmic, psychiatric, chest, skin, pediatric, endemic, obstetric and gynecological, and cancer hospitals.

Data collected for hospitals consisted of adjusted salaries and job descriptions for all personnel; the total quantity of each type of drug and medical material consumed; expenditures for renal dialysis; and expenditures for other types of materials and supplies, such as chemicals, food, and utilities. These data were collected from all hospitals in each pilot governorate. All expenditures collected for the BTS are totals for the 1992/1993 fiscal year. Hospitals have significant administrative expenditures. These were separated by classifying all personnel as medical or non-medical. Medical personnel have some specialized medical skill and are directly serving a medical function. Adjusted salaries for medical personnel were classified as curative. Nonmedical personnel have no special medical skill and are not directly involved in the prevention, diagnosis, treatment, or follow-up of injury, sickness, or disease. Salaries for nonmedical personnel were classified as administrative. We classified all other hospital expenditures as curative.

5.6.2.1 Preventive Units

Each governorate has a preventive or basic health care department. As with the curative department, not all units under the administration of this department provide primarily preventive or basic health care services. There are also units outside this department that provide preventive health care services. Units actually providing preventive services were found to include health offices, disease control offices, vaccination certification centers, quarantine centers, food and water testing laboratories, vector control, environmental sanitation, and food inspection. All expenditures for units whose actual function is entirely preventive were classified as curative.

Data collected for preventive units consisted of adjusted salaries and job descriptions for all personnel; the total quantity of each type of drug and medical material; and expenditures for other types of materials and supplies, such as chemicals and utilities. These data were collected from all preventive units in each pilot governorate. All expenditures collected for the BTS are totals for the 1992/1993 fiscal year.

5.6.2.2 Primary or MCH Units

Separate MCH units are normally found under a governorate's rural or basic health care department. Primary MCH units were found to provide primary or MCH services and some

preventive services. For MCH units, expenditures for administering preventive vaccines were classified as preventive, while all remaining expenditures were classified as primary or MCH.

Data collected for MCH units consisted of adjusted salaries and job descriptions for all personnel; the total quantity of each type of drug and medical material; and expenditures for other types of materials and supplies, such as chemicals and utilities. In Phase I, MCH units were treated as multifunction units. Data collection and classification for multifunction units are described in Section 5.6.3.

5.6.2.3 Family Planning Units

Separate family planning units may be administered by a governorate's basic care department, or may not appear in the official organizational chart at all. Embedded family planning units, those housed in general hospitals, central hospitals, health offices, and MCH units, do not appear on any organizational chart.

Data collected for separate and embedded family planning units consisted of adjusted salaries for all personnel; the total quantity of each type of drug and medical material; and expenditures for other types of materials and supplies, such as chemicals and utilities. These data were collected from all separate family planning units and embedded units in general and central hospitals. Expenditures for family planning units embedded in health offices and MCH units were handled as part of the sample survey conducted for multifunction units described below.

5.6.3 Multifunction Units

Multifunction units include rural health units, health groups, district or rural hospitals, and urban health centers. The units are typically administered by a governorate's "Rural Department" or "Basic Health Care Department." These health care units provide a variety of out-patient services that fall in two or more of the five functional categories. Medical personnel in these units have many duties and divide their time among the various functions. To allocate the expenditures of these units to the five function categories accurately, it was necessary to examine their expenditures in detail.

Reasonably accurate classification of Bab I, salaries and benefits, was the most complex problem encountered in Phase I and remains the biggest challenge to sustainability. To classify salaries for medical personnel in multifunction units, it is necessary to know how they spend their time. Official job titles are not sufficient. The large number of multifunction units in most governorates magnifies this problem. In Beni Suef alone, there are 93 rural health units. It is not reasonable to expect to obtain accurate information on how every medical worker in each multifunction unit allocates his or her time every year. A survey sampling approach is required. It will be necessary for the DOP to repeat this survey sample each year to ensure data quality and consistency while monitoring changes in time allocations. Results obtained from Phase I have been used to measure the variation in expenditures by function between units of the same type in different districts and governorates.

We selected at least two multifunction units of each type in each governorate for detailed analysis. The two units of each type were selected from different districts or areas in each governorate to diversify the sample. Table 4 lists the units of each type analyzed in Phase I, and Table 5 shows the density of sampling for multifunction units in each pilot governorate.

Table 10 *Multifunction units sampled in Phase I.*

Type of Unit	Governorate					
	Alexandria		Beni Suef		Suez	
MCH Unit	El-Goumrouk	Toson El-Mandra	Beni Suef	Ahnasia	Suez	Al-Arbeen
Health Office	El-Manshia	Bog Arab	Beni Suef	Naser	Suez	Ataka
Urban Health Center	Smouha	Abees-8	Beni Suef	Naser	Sabah	Arbeen
Health Group	Abees-2	El-Dekhela	Abshina	Kay		
Rural Health Unit	Abees-7		Sherif Basha	Al-Bourg	Amer	Gabalayat
Rural Hospital			Bilifia	Ashmant		

In each multifunction unit, DDM Team members collected a complete list of personnel with official job descriptions and adjusted salaries for the 1992/1993 fiscal year. Team members then interviewed all medical personnel to determine how they spent their time during an average week. The form used for this interview is included in Annex B, *Data Collection Checklist*. Responses were used to calculate the average percentage of time each worker devoted to the five function categories. This percentage distribution was then applied to the worker's adjusted salary. Results were summed to arrive at a total adjusted salary expenditure distribution by function for the unit.

Classification of Bab II drug expenditures in multifunction units does not present a major problem, as drugs and vaccines are easily classified as curative or preventive. Expenditures for family planning materials are easily classified as family planning. Pharmaceuticals, injections, syrups,

Table 11 *Density of sampling for multifunction health care units in each pilot governorate.*

Governorate	Number of Markaz or Districts	Population* 1992/1993	Multifunction Units					
			Rural Health Unit	Health Group	Rural Hosp.	Urban Health Center	Health Office	MCH Unit
Alexandria	**7**	**3,338,000**	**23**	**2**	**0**	**7**	**27**	**10**
Number Sampled	2		2	2		2	2	2
% Sampled	28.57%	6.02%	8.70%	100.00%		28.57%	7.41%	20.00%
Beni Suef	**7**	**1,680,000**	**93**	**24**	**5**	**4**	**10**	**8**
Number Sampled	2		2	2	2	2	2	2
% Sampled	28.57%	3.03%	2.15%	8.33%	40.00%	50.00%	20.00%	25.00%
Suez	**4**	**382,000**	**8**	**0**	**0**	**4**	**5**	**4**
Number Sampled	2		2			2	2	2
% Sampled	50.00%	0.69%	25.00%			50.00%	40.00%	50.00%
Total		5,400,000						
% Sampled		9.74%						
Remaining		50,040,500						

** Estimate based on 1992 and 1993 figures from CAPMAS.*

syringes, and other medical supplies used in MCH activities are classified as MCH expenditures. The complete classification methodology for drugs is detailed in the DDM report *Classification of Expenditures by Function* (RTI 5875-001-003). DDM Team members collected a complete list of all drugs and medical materials consumed during the 1992/1993 fiscal year in each multifunction unit sampled.

Remaining Bab II expenditures, Other Materials and Supplies, include utility expenditures (electricity, water, benzene); office supplies (paper, pencils, etc.); food for patients; and routine maintenance materials (paint, wood, etc.). Expenditures for office supplies used in management and administration are classified as administrative. Expenditures for food for patients are normally classified as curative, since they are incurred by units with curative inpatient facilities. There are several possible ways to classify utility expenditures in multifunction units. The selected method is consistent with the goals of a simple, repeatable technique that provides reasonable accuracy. In each multifunction unit sampled, DDM Team members estimated the floor space dedicated to each function. For example, a rural health unit has three rooms. One of these is used as an outpatient clinic, another as a family planning clinic, and another as an MCH clinic. The room for the family planning clinic is about the same size as the room for the MCH clinic. The room for the outpatient clinic is about twice the size of the MCH clinic. Therefore, 50 percent of utility and maintenance expenditures should be classified as curative, 25 percent as primary or MCH, and 25 percent as family planning. Although vaccinations may be administered in the MCH, this is difficult to separate and represents a very small fraction of utility and maintenance expenditures.

Expenditures in each function category were averaged for multifunction units of each type sampled in each governorate. The average distribution of expenditures by function for a budget category was then used to categorize expenditures in that budget category for other units of the same type in that governorate.

6 Software Development

Software for managing the data and viewing the results was developed using commercial spreadsheet software. Use of a commercially available product as a base saved significant time and money. Quattro Pro was selected because, at the time, it had technical features for application development lacking in competing products. The application requires Quattro Pro for Windows Version 5 or later. The spreadsheet application was designed to support Phase I and to test ideas for an Executive Information System (EIS) proposed for Phase II.

The application has an easy-to-use graphical user interface. The interface uses a combination of push-button icons and pull-down menus. Results can be displayed and printed in tables and graphs. Special features are included to help monitor data entry and to ease printing of multiple tables and graphs. The interface is currently in English since all DDM team members can work effectively in English. The application does have features that support conversion to an Arabic user interface. See the separate DDM BTS report, *Phase I: Software Guide* (RTI 5875-001-012), for the user guide and technical description of the BTS software.

Data are entered into clearly marked areas consolidated according to the type of unit. In Phase I, data for most individual units were entered in separate spreadsheets. Totals for each function category, budget category, and type of unit were transferred to the BTS software application. Though the spreadsheet application excels at tabular analysis and graphic data displays, it does not have the capacity or flexibility needed to handle large quantities of desegregated data. Our experience has shown that spreadsheet applications are best used to display and analyze consolidated results retrieved from databases. Under Phase II, work is under way to use the HIS database developed under the Child Survival Project as the core repository for both service delivery and expenditure data. This stand-alone FoxPro database application is being modified to meet the needs of the BTS. An easy-to-use EIS that can retrieve information from the HIS and display consolidated results as tables or graphs will be developed. Automated drug inventory control and personnel/payroll systems being developed under Phase II should provide some of the information needed by the combined HIS/BTS database. Successfully implementing either of these component database systems will eliminate several HIS forms and should improve the accuracy and timeliness of the results.

7 Analysis of Results

Annex C includes selected graphs showing results of Phase I data collection and classification in Alexandria, Beni Suef, and Suez. The graphs are ordered to show detailed information for each of the three governorates, then comparisons of the three governorates. A complete set of tables and graphs for each of the three governorates is available in a separate DDM BTS report: *Phase I Results* (RTI 5875-011). This is the first time this kind of information has been available to public health care professionals in Egypt.

Table 6 is a comparison of results from the Phase I pilot governorates with official expenditure figures from the MOF. Figures for Bab IV, grants, loan payments, and fund transfers are identical, as this information was provided by the MOF. Figures for Bab I, salaries, are less than six percent higher than reported by the MOF. Figures for Bab III, investments, are as much as 19.25 percent higher, and figures for Bab II, drugs and other materials and supplies, are as much as 25 percent higher.

Data collected by the BTS in Phase I represent actual consumption of drugs, medical supplies, family planning materials, and some non-medical materials. For example, units were ask to report actual consumption of drugs and medical materials for the fiscal year, which they did in numbers of pills, bottles, etc. Unit consumption was multiplied by the most accurate prices available to arrive at expenditures. There may be minor differences between actual prices paid and the figures we used to calculate expenditures. However, actual payment often lags consumption, so that some supplies consumed in one fiscal year are paid for in the next. The method used to calculate expenditures should therefore result in figures higher than cash outflows reported to the MOF officially.

Expenditure figures provided by the BTS are based on actual consumption, regardless of the source of funds. Some funds for drugs, chemicals, ambulance services, and hospital food come from the Headquarters Budget of the MOH. The Headquarters Budget includes funds for drugs,

some vaccines, vector control chemicals, supplies for blood banks, rehydration packets, family planning materials, and food delivery to hospitals. Also, in the 1992/1993 fiscal year, most vaccines and family planning materials were provided through foreign grants and projects. Again, figures provided by the BTS should be higher than those reported to the MOF.

Table 12 *Comparison of results with official Ministry of Finance figures.*

Alexandria			
Chapter	**BTS**	**MOF**	**% Difference**
Bab I	39,522,728	40,469,757	-2.34%
Bab II	11,435,414	13,684,240	-16.43%
Bab III	6,914,000	7,742,804	-10.70%
Bab IV	2,517,734	2,517,734	0.00%
TOTAL	**60,389,875**	**64,414,535**	**-6.25%**

Beni Suef			
Chapter	**BTS**	**MOF**	**% Difference**
Bab I	20,802,932	22,042,117	-5.62%
Bab II	6,038,680	4,833,661	24.93%
Bab III	1,361,200	1,141,471	19.25%
Bab IV	589,178	589,178	0.00%
TOTAL	**28,791,990**	**28,606,427**	**0.65%**

Suez			
Chapter	**BTS**	**MOF**	**% Difference**
Bab I	5,854,750	5,855,984	-0.02%
Bab II	3,779,600	3,366,441	12.27%
Bab III	975,500	1,039,176	-6.13%
Bab IV	3,992	3,992	0.00%
TOTAL	**10,613,841**	**10,265,593**	**3.39%**

Some differences between BTS and MOF figures for Bab II and Bab III may be the result of using sample estimates for multifunction units. In Phase I, total expenditures for each budget category for unsampled units were estimated using average expenditures of sampled units of the same type in each governorate. Actual total expenditures for each budget category for all multifunction units were not readily available at district or governorate levels. This should not be the case. Accuracy could be improved by applying average expenditure distributions by function, obtained through annual sampling, to the actual expenditures of each unit of that type. This information should be available through normal official reporting by the units. Also, it should not be necessary to separate Bab II expenditures for drugs and other materials and supplies for multi-function units using an average distribution obtained through sampling. These expenditures are recorded separately at unit, district, and governorate levels and should be readily available.

8 Conclusions

Most data necessary for classifying expenditures by function at the unit level are available in the governorates. Some changes in reporting and recording procedures will be necessary to build a sustainable system for monitoring expenditures by function.

The core of the problem is classification of salary expenditures by the five defined function areas in the many multifunction units. Medical personnel in these units divide their time among two or more function areas weekly. Neither the governorates nor the DOP has the capacity to collect and process time usage information for all medical workers in all multifunction units. An annual sample survey of these units will have to be conducted each year to determine how medical personnel in these units are spending their time by function. To maintain consistent national standards for data collection and classification, the DOP must be responsible for administering this survey. The DOP will need to train governorate personnel in how to use the standard survey standard form, how to distribute the forms, and how to monitor data collection. Standard, easy-to-use software for data entry and processing would allow governorates to collect and process their own data and derive the necessary average salary distributions by function and type of unit.

Separation of administrative salary expenditures in hospitals requires a list of personnel with adjusted salaries and accurate job descriptions. This information is available from the manual personnel/payroll system maintained by hospital accounting offices. A fairly simple personal-computer-based automated system would serve internal accounting needs of these hospitals, while making it easy to produce the data needed for the BTS. The same automated system in the governorate general accounting office could produce data needed by the BTS for nonhospital units. Installation of automated personnel/payroll systems in hospitals and governorate general accounting offices would eliminate the need to collect these data on HIS/BTS forms.

Central medical supply centers and district supply centers do not maintain records of consumption by individual health care units. This information is only available in the units themselves. Though official form books provide for unit-level recording, these fields are frequently ignored. Changing this practice in the manual system will be necessary to avoid having to collect this information each year from each unit.

A personal-computer-based drug inventory control system could be used by some central pharmacies to improve inventory control. At the same time, an automated system that captured consumption by individual health care units would easily provide the data needed by the BTS. Installation of this kind of system in central pharmacies, and adding unit-level consumption to district record keeping, would eliminate the need to collect this information on annual HIS/BTS forms.

Though tracking the source of funds expended was not originally a goal of the BTS, it has emerged as an important dimension. To accurately classify drug and medical supply expenditures, it is necessary to use actual consumption multiplied by actual price paid. Due to lags in paying suppliers, and multiple sources of funds for these items, this total figure will not

approach actual current expenditures for these items. Separating expenditures by source of funds would bring the two figures closer together. This cannot be done with complete accuracy, since source of funds is not always known. However, certain vaccines and types of family planning materials are entirely paid for through foreign grants. It may also be possible to separate drugs, chemicals, and other supplies paid for through the MOH Headquarters Budget. This would provide a somewhat clearer picture, particularly for governorate health directorates.

As with any information system, it is very important for users to understand how the information is extracted, so that results can be properly interpreted. It will be necessary to educate users through workshops, seminars, and documentation. This began under Phase I with meetings in the governorates and a three-day workshop in Cairo. The DDM project has been working with DOP staff to enable them to continue this effort after the end of the project.

9 Next Steps

Towards the end of Phase I, the DDM Team began working with the USAID-funded Child Survival Project to explore ways to integrate the BTS with the HIS being developed under that project. The HIS has been designed and partially deployed in Alexandria and Giza governorate health directorates. The system consisted of a large number of paper forms and a FoxPro database system to manage data entry and analysis. The data consisted largely of service delivery data of interest to the Child Survival Project. The DDM Team worked with HIS developers to modify key forms and design new forms that incorporated the expenditure information needed by the BTS.

The new and revised forms also include fields for collecting the information necessary for classifying salary, drug, and other material and supplies expenditures for most types of units. The exception is classification of salary expenditures by function for multifunction units. This will still require an annual sample survey of multifunction units to determine the average distribution of staff time among the five health function categories. The distribution, collection, and data entry for the new and revised HIS/BTS forms is still a major challenge. Automating record keeping for two of the major components, drug inventory control and personnel salaries, could distribute the data collection and entry burden transparently.

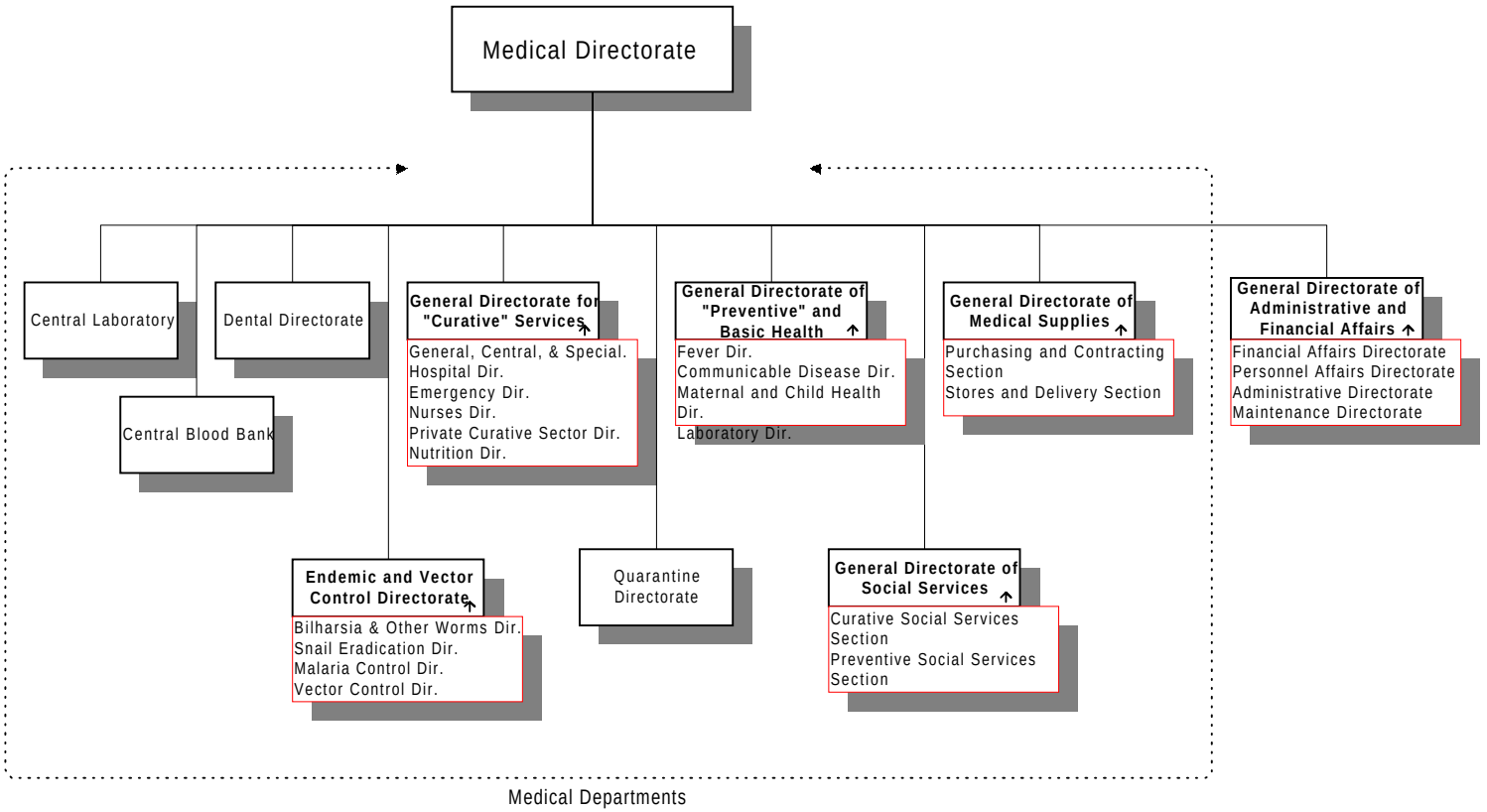
As the Phase I results show, salary expenditures are by far the largest component of expenditures at any level. Although this finding was expected, the magnitude was often surprising. Related DDM activities have demonstrated that staff levels and composition in many health care facilities do not correspond with service delivery levels. The DDM Team has found that staffing of the various types of health care units does not follow any formula based on expected patient or service delivery loads and varies widely within and between governorates. Governorate health directors have very limited latitude in distributing staff among units. Major policy changes are needed to correct this situation. A personnel/payroll system, located at the level of the governorate health directorate, would be very useful in managing and monitoring such a change in policy. In addition, it could provide the information necessary for classifying Bab I expenditures by function for most units automatically. Again, the only exception is multifunction units, where an annual survey of how medical staff spend their time will still be necessary.

Adjusted salaries are currently calculated by hand. The many adjustments to base salary are not consolidated into a single net adjustment factor, but are calculated cumulatively using very large printed forms. These forms are passed from unit to district to central governorate accounting clerks and directors monthly where they are reviewed, signed, and stamped before checks are issued in the reverse direction. An automated personnel/payroll system in the central Health Directorate would eliminate much of this processing. Monthly forms filled out in the units and passed up through the administrative chain would be necessary only for verification and change of status. As with all such systems, the major task would be initial entry of the data.

Testing of an automated personnel/payroll system is one of the tasks under Phase II. Efforts will focus on identification of an existing system that can operate on stand-alone IBM-compatible microcomputers and can be modified to meet requirements in the governorates without major changes.

Annex A: Organizational and Functional Diagrams of Pilot Governorates

Alexandria Governorate: Administrative Structure



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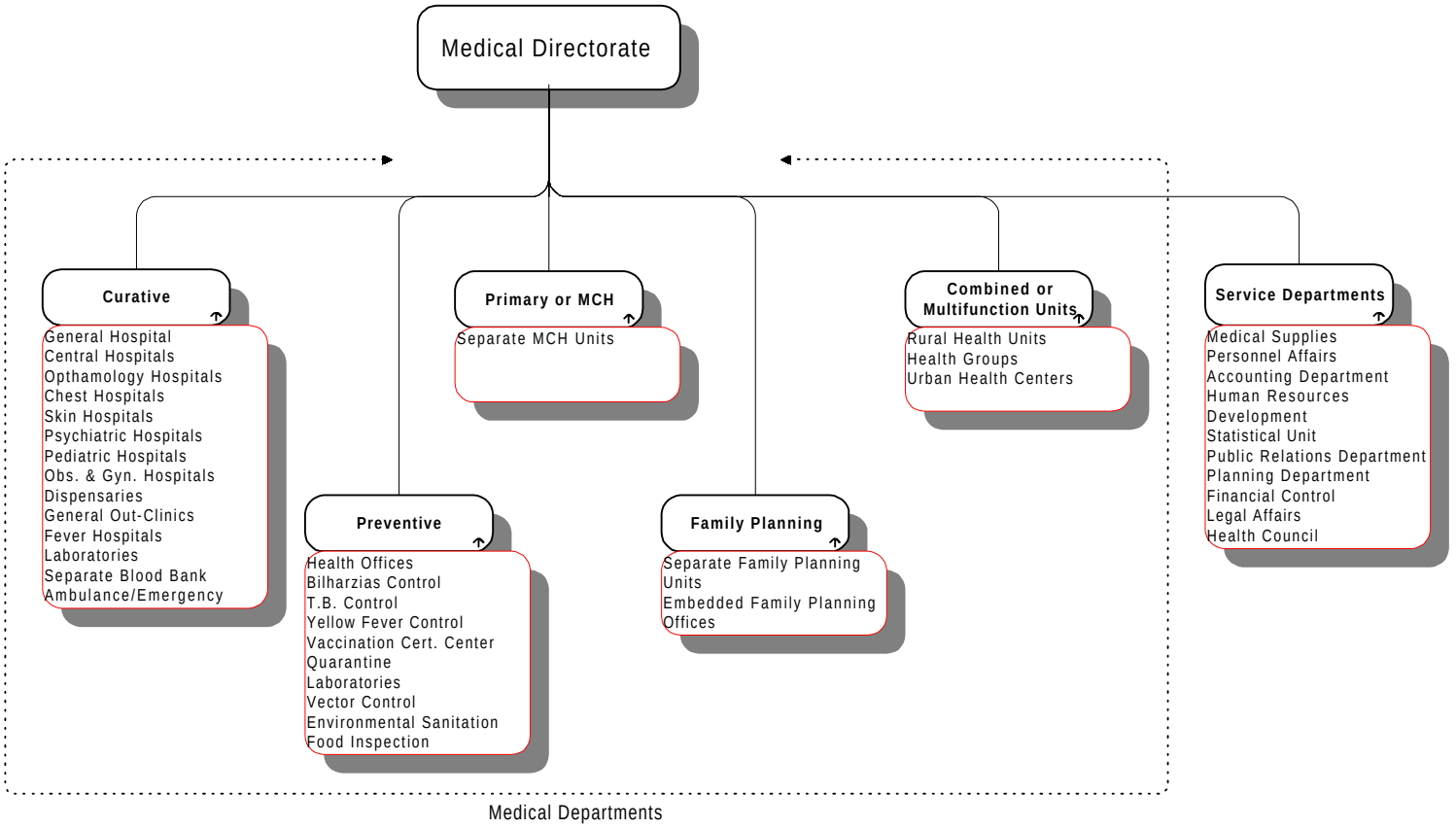
	Process: Alexandria Organization		Approved by: Dr. M. Abdel Latif	Date: 8/4/97

Alexandria Governorate: Functional Structure



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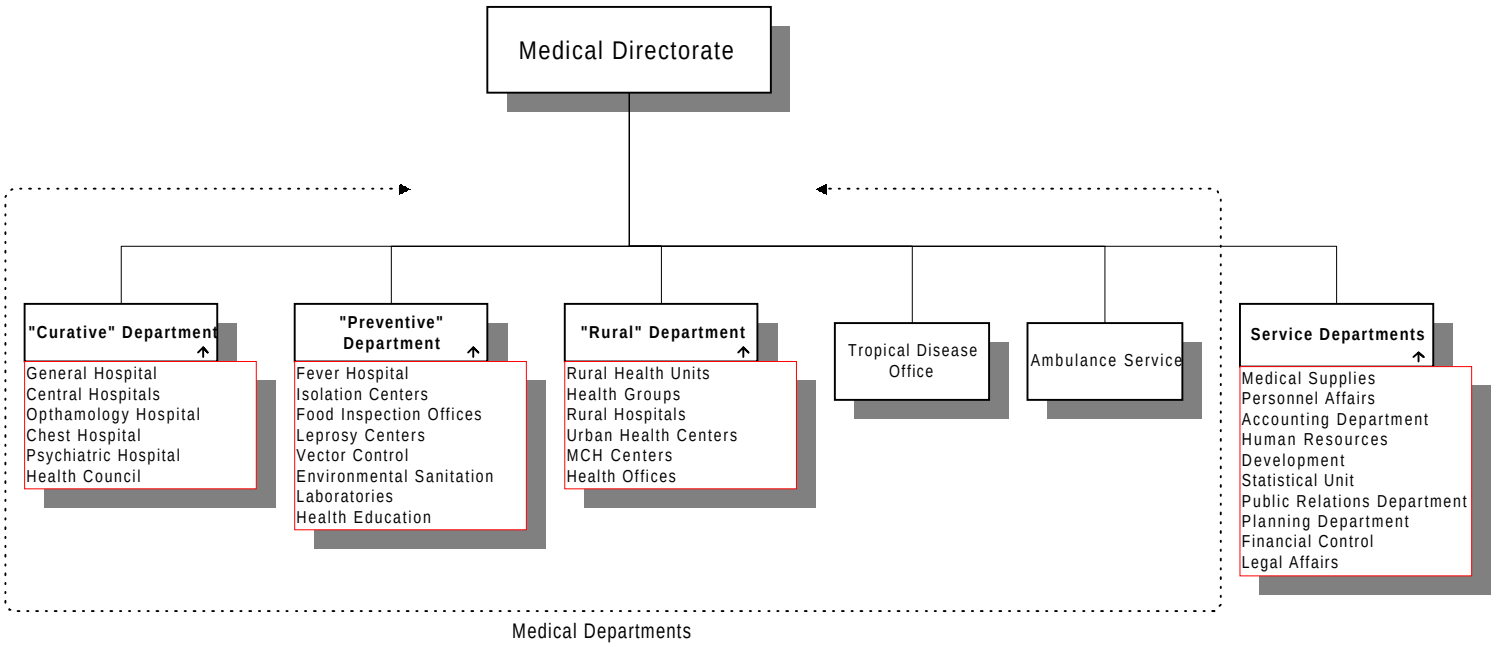
Beni Suef Governorate: Administrative Structure



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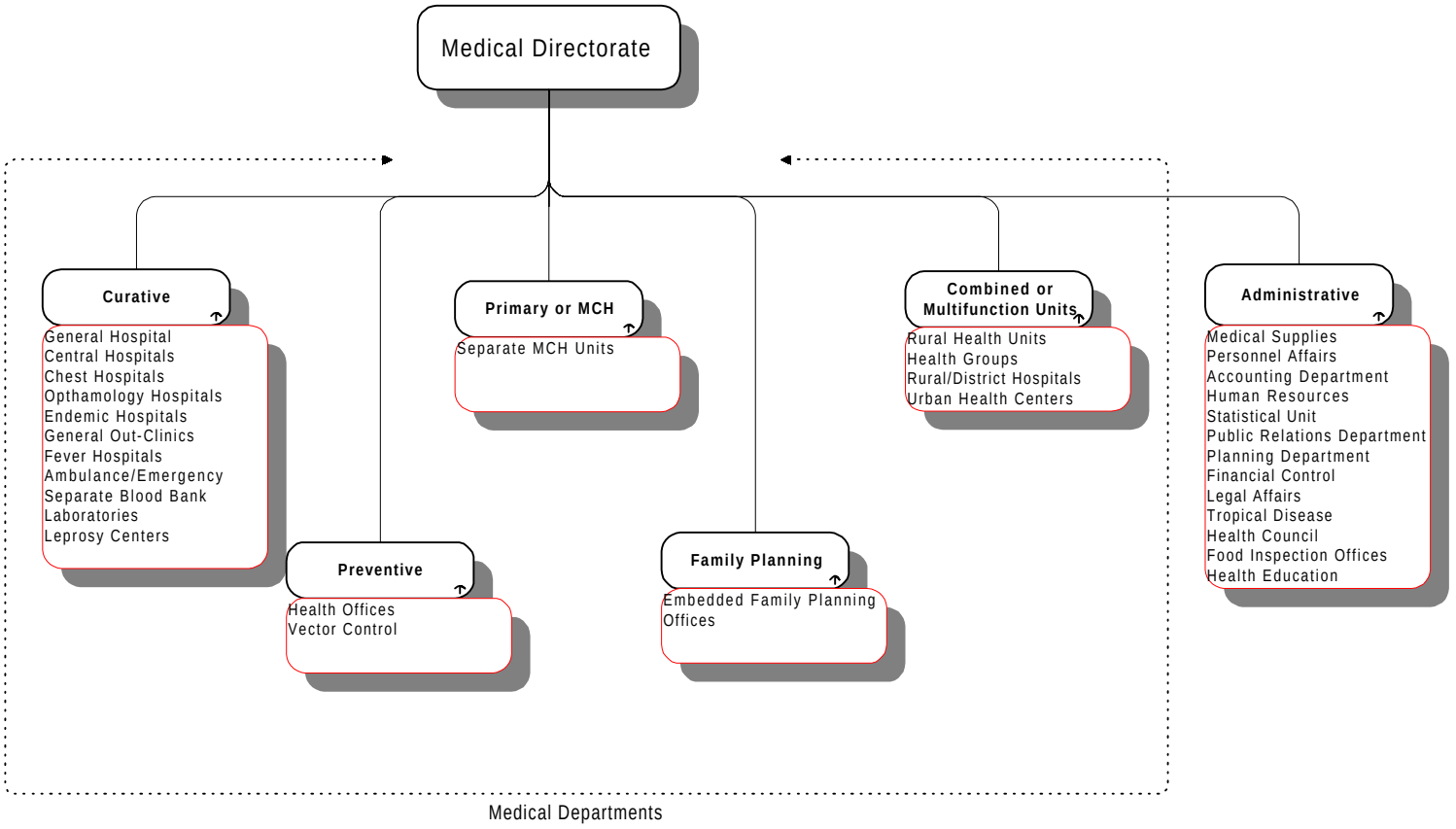
Beni Suef Governorate: Functional Structure



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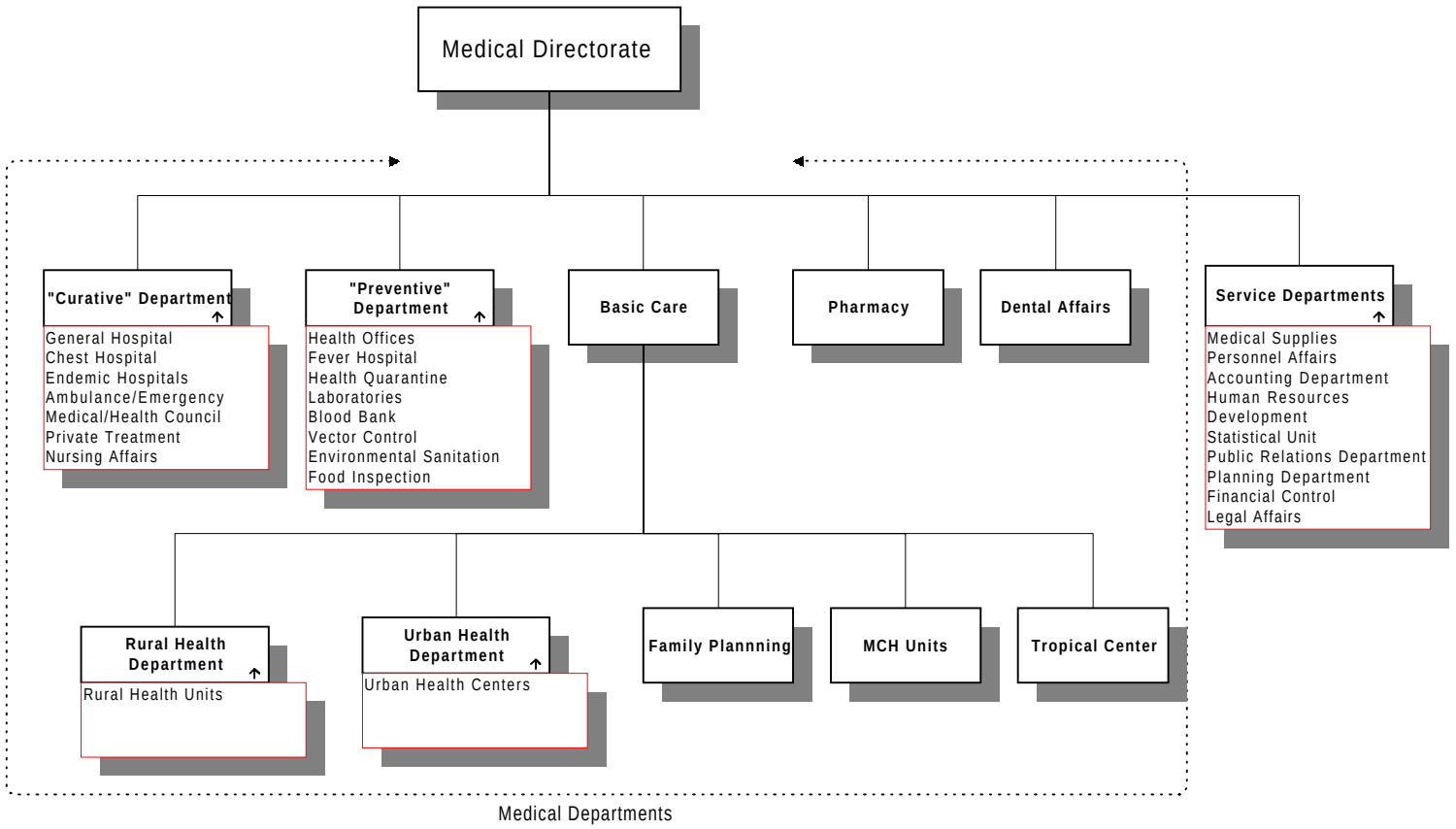
	Process: Beni Suef Organization		Approved by: Dr. M. Abdel Latif	Date: 8/4/97

Suez Governorate: Administrative Structure



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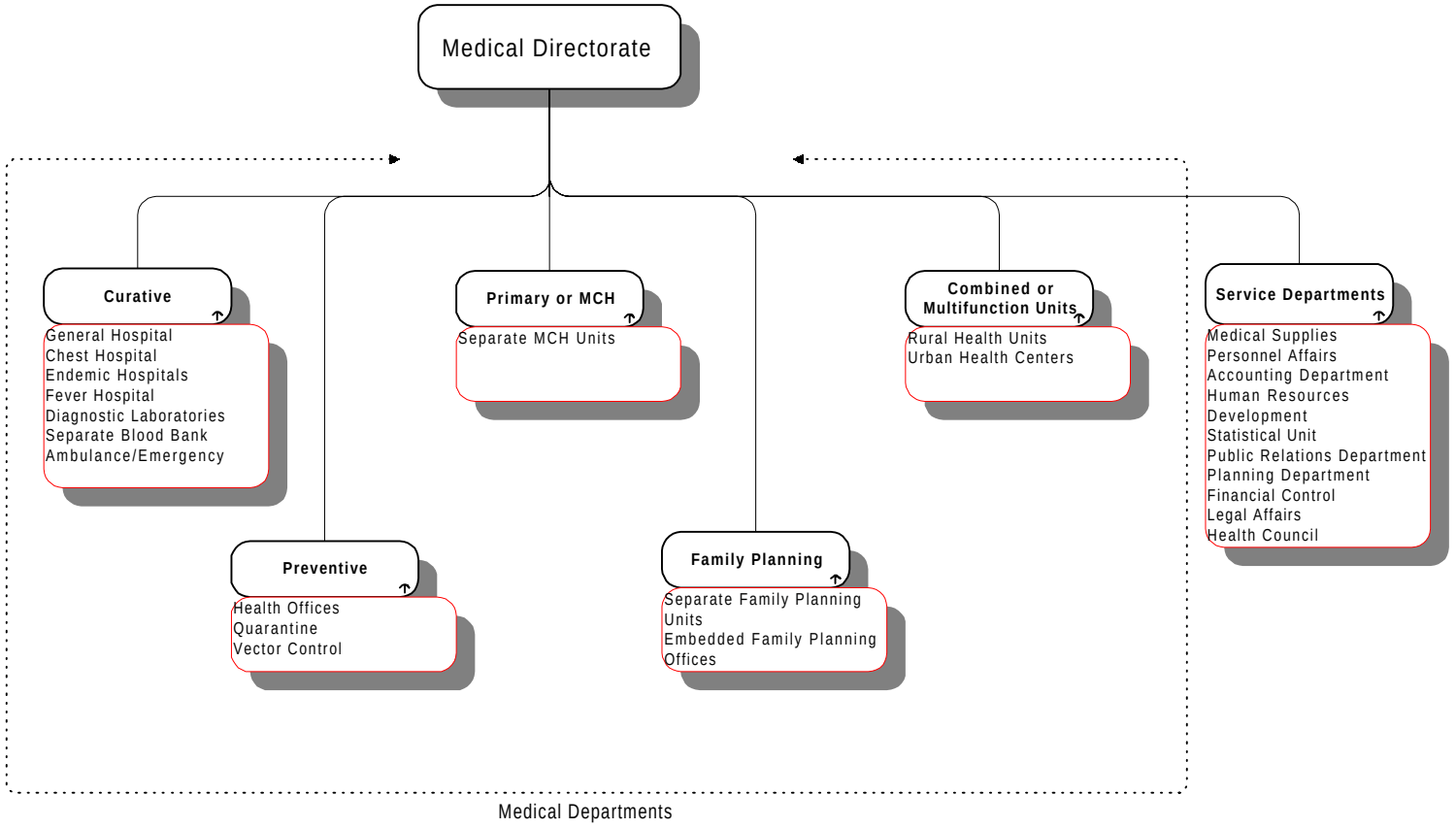
	Process: Suez Governorate Organization		Approved by: Dr. M. Abdel Latif	Date: 8/4/97

Suez Governorate: Functional Structure



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	Process: Suez Governorate Organization		Approved by: Dr. M. Abdel Latif	Date: 8/4/97

Annex B: Data Collection Checklist

Heath Budget Tracking System
Data for Decision Making Project

Data Collection Checklist

Phase I - Pilot Study:
Bani Swayf, Suez, Alexandria Governorates

May 19, 1996

Dr. Mahmoud Abdel Latif
Gordon M. Cressman

Introduction

This checklist was developed based on experience gained in the Health Budget Tracking System Phase I Pilot Study. This study began in November of 1993. Data collection, classification, and was completed in early 1995. A workshop for participating governorates, central departments, and project staff was held in July 1995 to discuss the results.

The following sections, arranged as a checklist, describe where each type of data was collected in Phase I. In many cases, the same information is collected in several locations. This allows information to be cross-checked for accuracy. When discrepancies occur, data are checked with each source to try to obtain the most accurate results.

All data collected are for a single fiscal year. The fiscal year begins on the first day of July and ends on the last day of June of the following year. All official accounting records are kept on this basis. In Phase I, data was collected for the 1992/1993 fiscal year, which at that time was the most recent year of data available.

Data is collected at the governorate level for the following budget categories:

Bab I - Salaries
Bab II - Drugs
Bab II - Other Materials and Supplies

Bab IV - Grants, Loan Payments, and Transfers are not current expenditures and are therefore not considered.

All expenditure data is collected for individual units. A unit is an office or facility whose expenditures can be separately identified and that normally serves a well-defined function.

Data collected are current expenditures for actual consumption. Data collected for salary expenditures are annual gross salaries by individual position. Gross salaries are base salaries

plus adjustments and incentives before deductions for taxes, social insurance, etc. Salaries for persons seconded to other units should not be included in a unit's salary accounting. Salaries for persons seconded from other units should be accounted for in the unit where they are working. Salaries for persons on unpaid leave should not be included.

Data collected for drug consumption are total quantities of each drug consumed by each unit for the fiscal year. The unit of measurement for each type of drug must be recorded.

Data collected for other materials and supplies are annual expenditures for quantities consumed by each unit.

This document is a check-list of what data should be collected for budget tracking, and where that data can be found in the governorate. Annex A lists the data required for budget tracking according to the type of unit (facility). Annex B lists the data needed for budget tracking in each budget category, and the location where that data should be found in the governorate. Annex C is an example questionnaire used to collect informatoin on how medical personnel in multifunction units spend their time performing various functions.

1 Heath Directorate

This is the central administration of all health departments and facilities in the governorate.

1.1 Directorate Office:

(This is the central office of the Directorate. Initial contact is with the Director General of Health.)

❑ 1. Organizational Chart. This should show the organization of all medical and service departments, the relationship between these departments, and the relationship between these departments and the facilities under their supervision.

1.2 Accounting Department

❑ 1. Headquarters administrative expenditures of the Heath Directorate and District administrations separately.

❑ 2. Expenses paid directly by the central administration for district health facilities (e.g. water, gas, electricity, etc.).

❑ 3. Supportive expenditures from the Ministry of Health for large facilities, such as Ambulance, Quarantine, Central Blood Bank, Central Laboratory, Central (District) and specialized hospitals.

❑ 4. Expenditures for central medical activities, such as Vector Control, disease control units (e.g. Malaria, TB, Yellow Fever) and Health Education.
Food expenditures for hospitals.

1.3 Central Pharmaceutical Store

❑ 1. A description of the drug distribution system. This should include a description of the various substores.

❑ 2. Reporting system between the facilities and the central and district stores.

❑ 3. Drugs, including chemicals, supplied directly through the MOH, and where they are consumed.

1.4 Central Vaccine Refrigerator

❑ 1. Vaccine distribution system.

❑ 3. Reports about vaccine consumption by unit.

❑ 4. Pricing of consumed vaccines by dose.

1.5 Medical Supply Department:

❑ 1. Medical materials other than drugs (e.g. syringes, catheters, etc.).

❑ 2. Benzene consumption and work location (function) of each vehicle.

1.6 Planning Department:

❑ 1. Actual expenditures for Bab III from the monitoring office. This should provide enough information on each Bab III project to allocate expenditures to specific units.

2 Preventive Department

❑ 1. Check vaccine consumption by dose for each unit (facility).

3 District Office

3.1 Director's Office:

❑ 1. The number of units by type of unit in that district.

3.2 Accounting Department:

❑ 1. Headquarters administrative expenditures.

❑ 2. Salaries and utilities of separate Health Offices and MCH units.

❑ 3. Utilities expenditures of other units (Rural Health Unit, Health Group, Rural (District) Hospital, Urban Health Center) for each unit.

3.3 Pharmaceutical Store:

❑ 1. Drug consumption of each facility (including vaccines, chemicals, and family planning materials) if possible.

4 Health Units (Facilities)

4.1 General, Central, and Specialized Hospitals:

❑ 1. Salary sheet for all staff with clear job descriptions (at Personnel Affairs Office)

❑ 2. Drug consumption (from out-patient and in-patient pharmacy and NOT from Accounting Office.

❑ 3. Utility expenditures, including patient and staff food (from Accounting Office).

❑ 4. Dialysis expenditures.

4.2 Ambulance, Quarantine, Central Blood Bank, Disease Control Units:

❑ 1. Salary sheet for all staff with clear job descriptions (at Personnel Affairs Office).

❑ 2. Drugs (and/or vaccines, chemicals, any medical materials) consumption.

❑ 3. Utilities expenditures.

4.3 Central Laboratory:

❑ 1. Salary sheet for all staff with clear job descriptions (at Personnel Affairs Office).

❑ 2. Chemicals, any medical materials consumption.

❑ 3. Utilities expenditures.

❑ 4. Investigations for food and water samples (as a PREVENTIVE activity).

4.4 Separate Health Office and MCH Center:

❑ 1. Salary sheet for all staff with clear job descriptions (at clerk's office).

❑ 2. Drugs consume, separated into:

- Ordinary pharmaceuticals (e.g. antibiotics, antihelmenthics, tonics, etc.)
- Vaccines
- Family planning materials.

❑ 3. Utilities expenditures.

❑ 4. Family Planning Center (salaries, materials, average utilities expenditures) linked to unit.

4.5 Combined (Multifunction) Units (Rural Health Unit, Health Group, Rural Hospital, Urban Health Center):

❑ 1. Salary sheet for all staff with clear job descriptions (at clerk's office).

❑ 2. Drugs consumed (from Pharmacy) separated into:

- Ordinary pharmaceuticals (e.g. antibiotics, antihelmenthics, tonics, etc.) consumed by out-clinic patients (as a CURATIVE activity) and MCH clinic.

- Vaccines
- Family planning materials

❑ 3. Utilities expenditures

❑ 4. Interview staff to determine how the spend their time, on average, among the different functions of the unit.

An interviewing form is included in Annex C. Results from this form are analyzed for each doctor and nurse in selected multifunction units of each type. The resulting time distribution is used to divide each medical staff member's gross salary, as described in Classification of Health Expenditures (Cressman, Abdel Latif, 1996).

❑ 5. The number and size of rooms, and the function of each room.

The methodology for doing this is detailed in Classification of Health Expenditures (Cressman, Abdel Latif, 1996).

❑ 6. Work schedule for each different activity (daily, weekly).

5 Cross-Checking

Check the computed salaries, drugs, utilities, and investments from the various units against the total Bab I, Bab II, and Bab III expenditures provided by the governorate Health Directorate.

Take advantage of any other opportunities there may be to check expenditures calculated based on consumption with officially recorded figures.

6 Special Considerations

Renal Dialysis
Renal Dialysis expenditures (in the form of drugs and other medical supplies) may be incorporated into General Hospital expenditures, or may have a separate account in the Headquarters expenditures, or may be incorporated in administrative expenditures for Bab II. Make sure to check all of these sources and record these expenditures for the General Hospital.

Drugs and Medical Supplies from Ministry of Health
Some types of drugs and medical supplies are provided directly by the Ministry of Health (e.g. blood bank materials, investigatory reagents, blood bags, some endemic drugs, such as Bilharzias treatment and anti-Malarial drugs, most laboratory chemicals, vector control chemicals, Leprosy and oral rehydration treatment packets). Consumption of these materials should be recorded in each unit, and their costs added to the expenditures of each unit. These expenditures are not included in the official records of the governorate.

Utilities for Small Units

You may not be able to capture some utility expenditures for some small units. Try to estimate these based on known utility expenditures for other units of similar size and function.

Salaries

When collecting salary information, make sure not to include salaries for:

- persons on unpaid leave; and
- persons seconded to other units.

Annex A: Data Needed for Budget Tracking by Type of Unit

Class of Unit	Type of Unit	Units	Data Needed
Non-Medical	Support Units	Medical Supplies Office Personnel Affairs Accounting Human Resources Development Statistical Unit Public Relations Planning Financial Control Legal Affairs Training Social Affairs Medical or Health Council Nursing Affairs Private Treatment Governorate and District Headquarters also normally include administrative offices for each of the major health service departments: Curative Department, Preventive Department, Basic Health Care Department, and so on.	Bab I - Salaries ❏ Total gross salary paid to employees for the fiscal year. Bab II - Other Materials and Supplies ❏ Total expenditures for fiscal year for electricity, water, benzene, building maintenance, and office supplies.

Class of Unit	Type of Unit	Units	Data Needed
Medical Units	Single Function	Curative: Ambulance/Emergency Central Blood Bank Diagnostic Laboratory X-Ray Center General Out-Clinic Dispensaries Preventive: Health Offices Quarantine Disease Control Vaccination Certification Center Food and Water Testing Vector Control Environmental Sanitation Food Inspection Primary (MCH): Separate MCH Units Family Planning: Separate Family Planning Centers	Bab I - Salaries ❑ List all staff with clear job description and annual gross salary. Bab II - Drugs, Medical Supplies ❑ List all drugs and medical supplies consumed, total amount consumed in fiscal year, and unit of measurement for each drug. Include vaccines, chemical reagents, vector control chemicals, and X-Ray films. Bab II - Other Materials and Supplies ❑ Total expenditures for fiscal year for electricity, water, benzene, building maintenance, and office supplies. Include patient and staff food for in-patient facilities.

Class of Unit	Type of Unit	Units	Data Needed
		Hospitals: General Hospital Central Hospital Specialized hospitals: Fever Hospitals Isolation Centers Ophthalmic Hospital Psychiatric Hospitals Chest Hospitals Skin Hospitals Pediatric Hospitals Endemic Hospitals Obstetric and Gynecological Hospitals Cancer Hospitals Leprosy Center (Hospital)	Bab I - Salaries ❑ List all staff with clear job description and annual gross salary. Bab II - Drugs, Medical Supplies ❑ List all drugs and medical supplies consumed, total amount consumed in fiscal year, and unit of measurement for each drug. Include vaccines, chemical reagents, vector control chemicals, and X-Ray films. Also include expenditures for dialysis. Bab II - Other Materials and Supplies ❑ Total expenditures for fiscal year for electricity, water, benzene, building maintenance, and office supplies. Include patient and staff food for in-patient facilities.

Class of Unit	Type of Unit	Units	Data Needed
Medical Units	Multifunction	Rural Hospital Health Group Rural Health Unit Urban Health Center	Bab I - Salaries ❑ List all staff with clear job description and annual gross salary. ❑ Work schedule for the unit (daily, weekly) for each different activity. ❑ Interview staff to determine how they spend their time, on average, among different functons of the unit. Bab II - Drugs, Medical Supplies ❑ List all drugs and medical supplies consumed, total amount consumed in fiscal year, and unit of measurement for each drug. Include vaccines, chemical reagents, vector control chemicals, and X-Ray films. Include expenditures for dialysis. ❑ Separate drugs into ordinary pharmaceuticals (antibiotics, antihelmenthics, tonics, etc.) consumed by out-patient clinics (Curative), and drugs consumed by the MCH clinic (MCH). Bab II - Other Materials and Supplies ❑ Total expenditures for fiscal year for electricity, water, benzene, building maintenance, and office supplies. Include patient and staff food for in-patient facilities. ❑ The number and size of rooms, and the function of each room.

Annex B: Location of Data Required for Budget Tracking

Budget Category	Data to be Collected	Location of Data
General Organization	❑ Organizational chart of Health Directorate ❑ Number of units (facilities) of each type in each district	Directorate Office, Health Directorate
	❑ Number of units (facilities) by type of unit in the district	Director's Office, District Office
Bab I - Salaries	❑ Gross salaries of headquarters administrative staff	Accounting Department, Health Directorate
	❑ Gross salaries of district headquarters staff ❑ Gross salaries of separate Health Offices and MCH Units	Accounting Department, District Office
	❑ Gross salaries of personnel with clear job descriptions	Personnel Affairs Office or clerk's ofice in each unit (facility)
	❑ Completed time usage interviews with all medical personnel ❑ Normal work schedule for unit (facility)	Selected multifunction units of each type
	❑ Gross salaries of all personnel	Family Planning Center, Separate Health Offices and MCH Centers
Bab II - Drugs	❑ Supportive expenditures from the MOHP for large facilities (Ambulance, Quarantine, Central Blood Bank, Central Laboratory, Central (District) Hospitals and specialized hospitals ❑ Expenditures for central medical activities (Vector Control, disease control units (Malaria, TB, Yellow Fever) and Health Education ❑ Food Expenditures for hospitals	Accounting Department, Health Directorate
	❑ Description of drug distribution system ❑ Reporting system between units (facilities), district stores, and central store ❑ Drugs, including chemicals, supplied directly through the MOHP, and where they are consumed	Central Pharceutical Store

Budget Category	Data to be Collected	Location of Data
	❑ Drug consumption of each unit (facility), including vaccines, chemicals, and family planning materials, if possible	Pharmaceutical Store, District Office
	❑ List of drugs consumed by in-patient and out-patient pharmacy (NOT from Accounting Department) ❑ Dialysis expenditures	General, Central, and specialized hospitals
	❑ List of drugs consumed separated in ordinary pharmaceuticals (antibiotics, antihelmenthics, tonics, etc.), vaccines, and family planning materials	Separate Health Offices and MCH Centers
	❑ Consumption of family planning materials by type	Family Planning Center, Separate Health Offices and MCH Centers
	❑ List of drugs consumed, including vaccines, chemicals, and family planning materials	Pharmacy, All other units (facilities)
	❑ Vaccine distribution system ❑ Vaccine consumption by unit (facility) ❑ Pricing of consumed vaccines by dose	Vaccine Refrigerator
	❑ Vaccine consumption by dose for each unit (facility)	Preventive Department, Health Directorate
	❑ Consumption of medical supplies other than drugs (syringes, catheters, X-Ray film, etc.)	Medical Supply Department
	❑ Consumption of chemicals and medical supplies	Central Laboratory
Bab II - Other Materials and Supplies	❑ Unit (facility) expenses paid directly by headquaters (water, gas, electricity)	Accounting Department, Health Directorate
	❑ Benzene consumption and work location (facility) of each vehicle	Medical Supply Department, Health Directorate
	❑ Utility expenditures for each unit in district	Accounting Department, District Office
	❑ Utility expenditures, including food for staff and patients	Accounting Office, General, Central, and specialized hospitals

Budget Category	Data to be Collected	Location of Data
	❑ Average utility expenditures	Family Planning Center, Separate Health Offices and MCH Centers
	❑ Utility expenditures	All other units (facilities)
	❑ Number and size of rooms	Selected multifunction units
Bab III - Investments	❑ Actual expenditures by projects for specific units or facilities	Planning Department, Health Directorate
	Reported expenditures by project	Directorate of Planning, Ministry of Health

Annex C: Questionnaire for Interviewing Medical Staff in Multifunction Units

Date:		Name of Unit (Facility):	
Fiscal Year:		Type of Unit (Facility):	
Name of Governorate:		Name:	
Name of Markaz/District:		Job (Position):	

1. How many hours do you spend in each of the following functions (duty)?:

1.1 Out-clinic from [ ] to [ ] every [ ] days per week.
1.2 Pharmacy from [ ] to [ ] every [ ] days per week.
1.3. Lab. from [ ] to [ ] every [ ] days per week.
1.4. F.P. from [ ] to [ ] every [ ] days per week.
1.5 MCH from [ ] to [ ] every [ ] days per week.

(Include rehydration, new-born until age of five (5), pregnant and lactating women.

1.6 Vaccination from [ ] to [ ] every [ ] days per week.
1.7 Health education from [ ] to [ ] every [ ] days per week.
1.8 In-patient wards from [ ] to [ ] every [ ] days per week.

2. From your experience, what is the share of each function in the total activity of the unit (facility).

Curative (out-clinic, pharmacy, labs, operations) [ ]%
Preventive (vaccination, environmental and food sanitation, health education [ ]%
MCH (except vaccinations) [ ]%
Family planning [ ]%

3. If you have an operating room (theater), what is the normal rate of use?

[ ] Hours per Day
or [ ] Hours per Week

4. Did you arrange any vaccination campaign in the last six (6) months?

4.1 If yes, please list the time spent in carrying out this campaign:

[ ] Days inside the unit (facility)
[ ] Days outside the unit (facility)

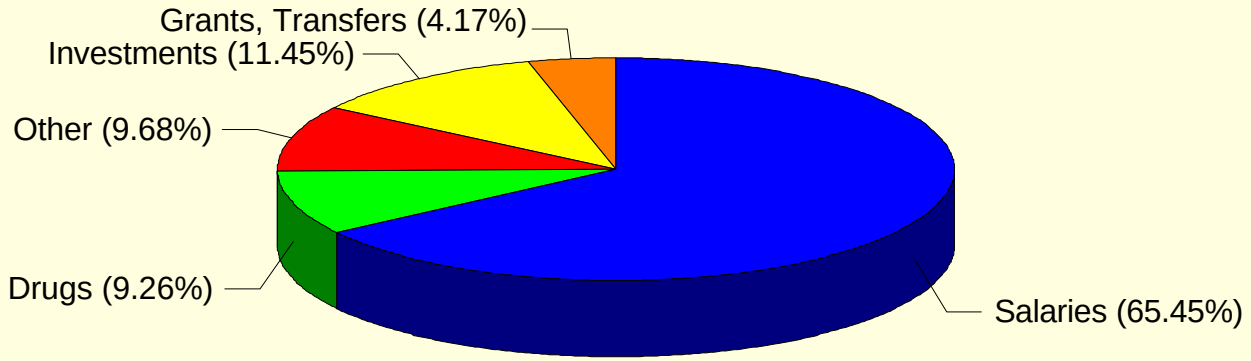
Annex C: Results


Alexandri
Alexandria

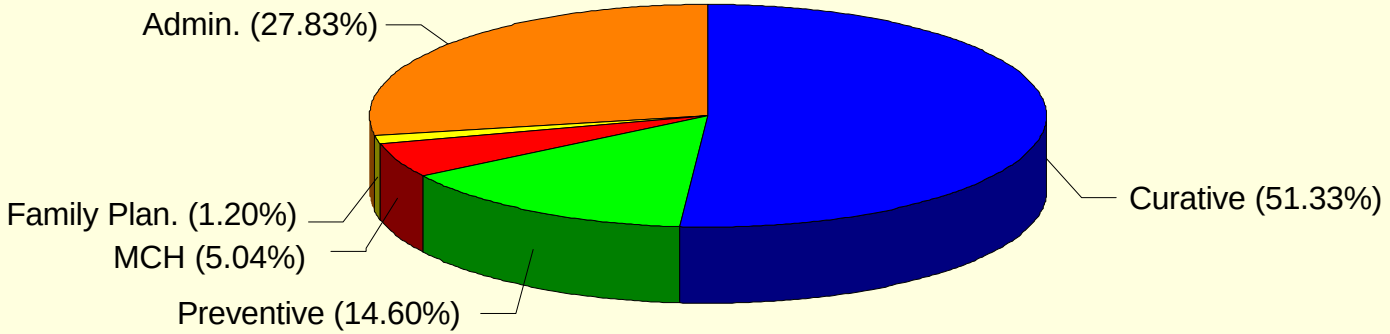
Alexandria

1992/1993

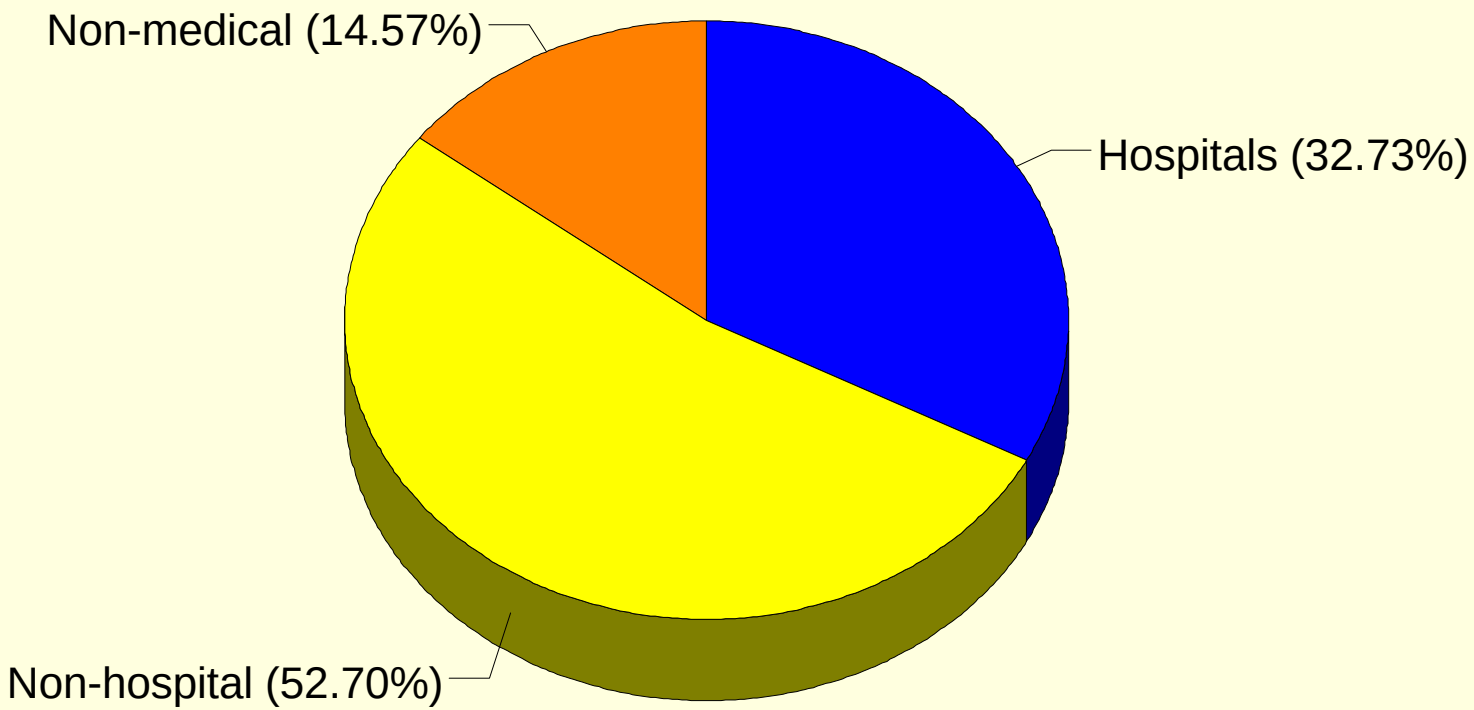
Budget Categories



Functional Categories



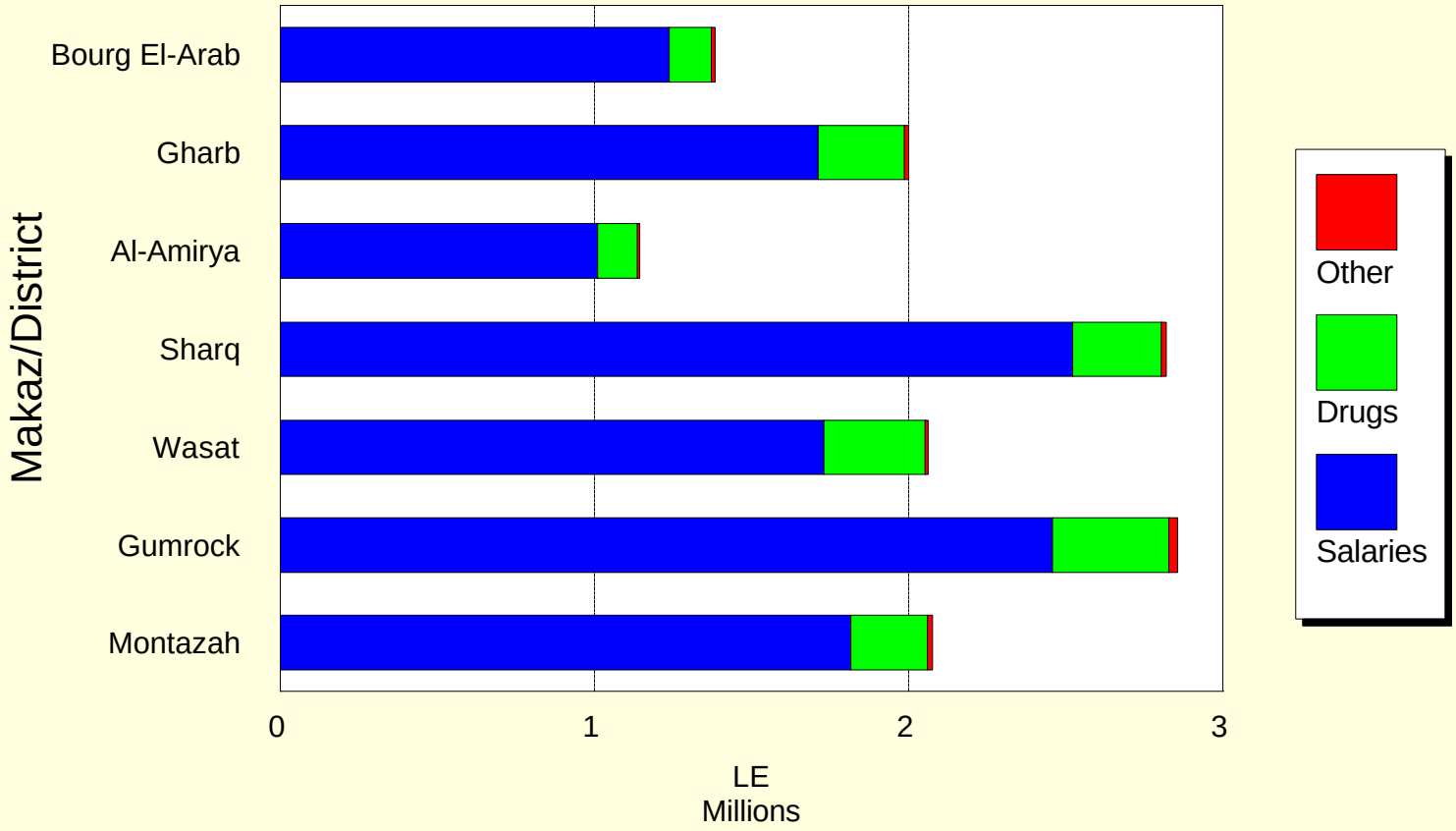
Hospital Vs Non-Hospital Expenditures
Alexandria 1992/1993



Hospitals include General, Central, Specialized, Fever, and Rural or District Hospitals.
Non-hospital facilities include all health care units that are not classified as hospitals.
Non-medical units are administrative and support units that do not directly service a medical

"Basic" Department

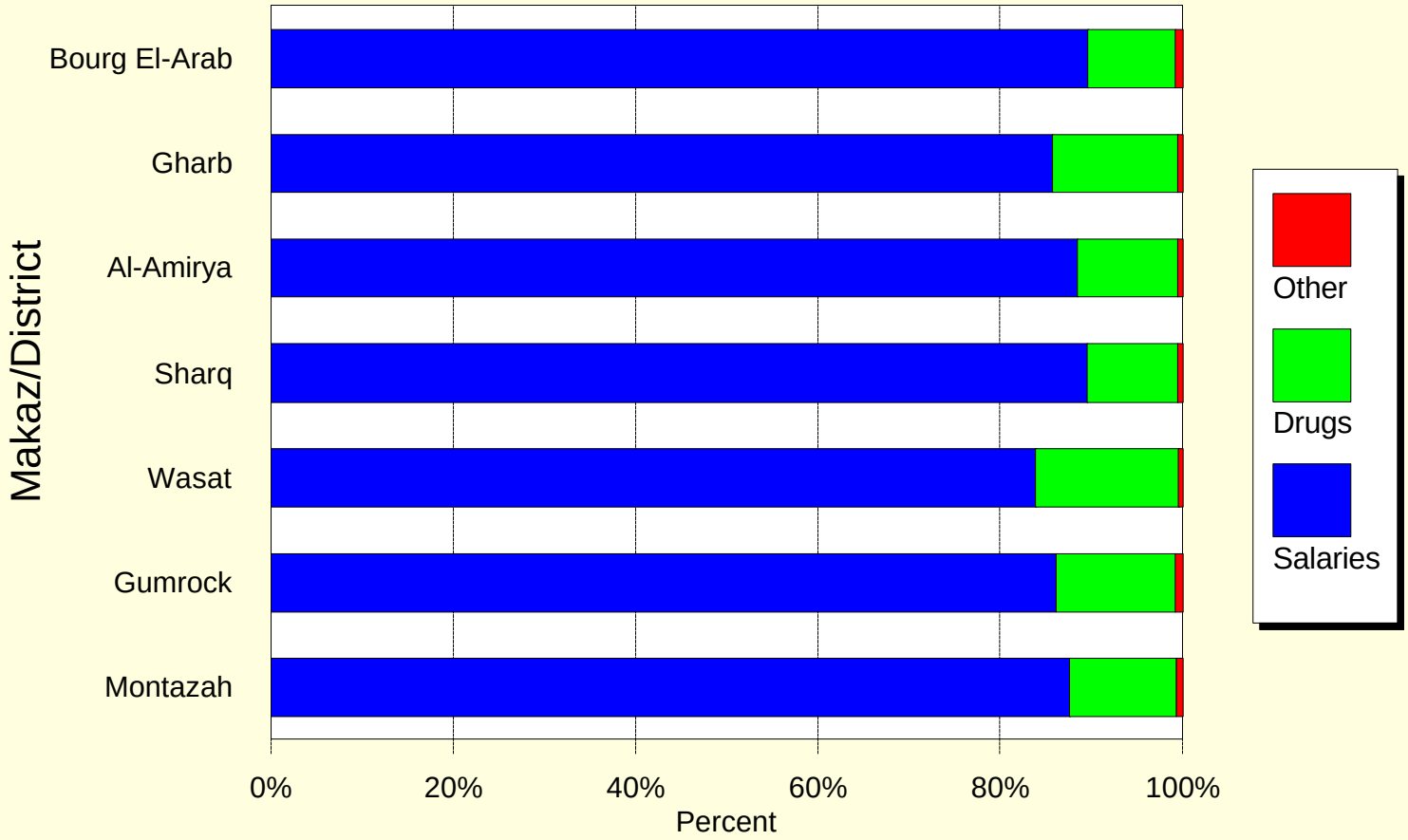
Alexandria 1992/1993



Rural Health Units, Health Groups, Urban Health Centers, Health Offices, Rural Hospitals, MCH Units

"Basic" Department

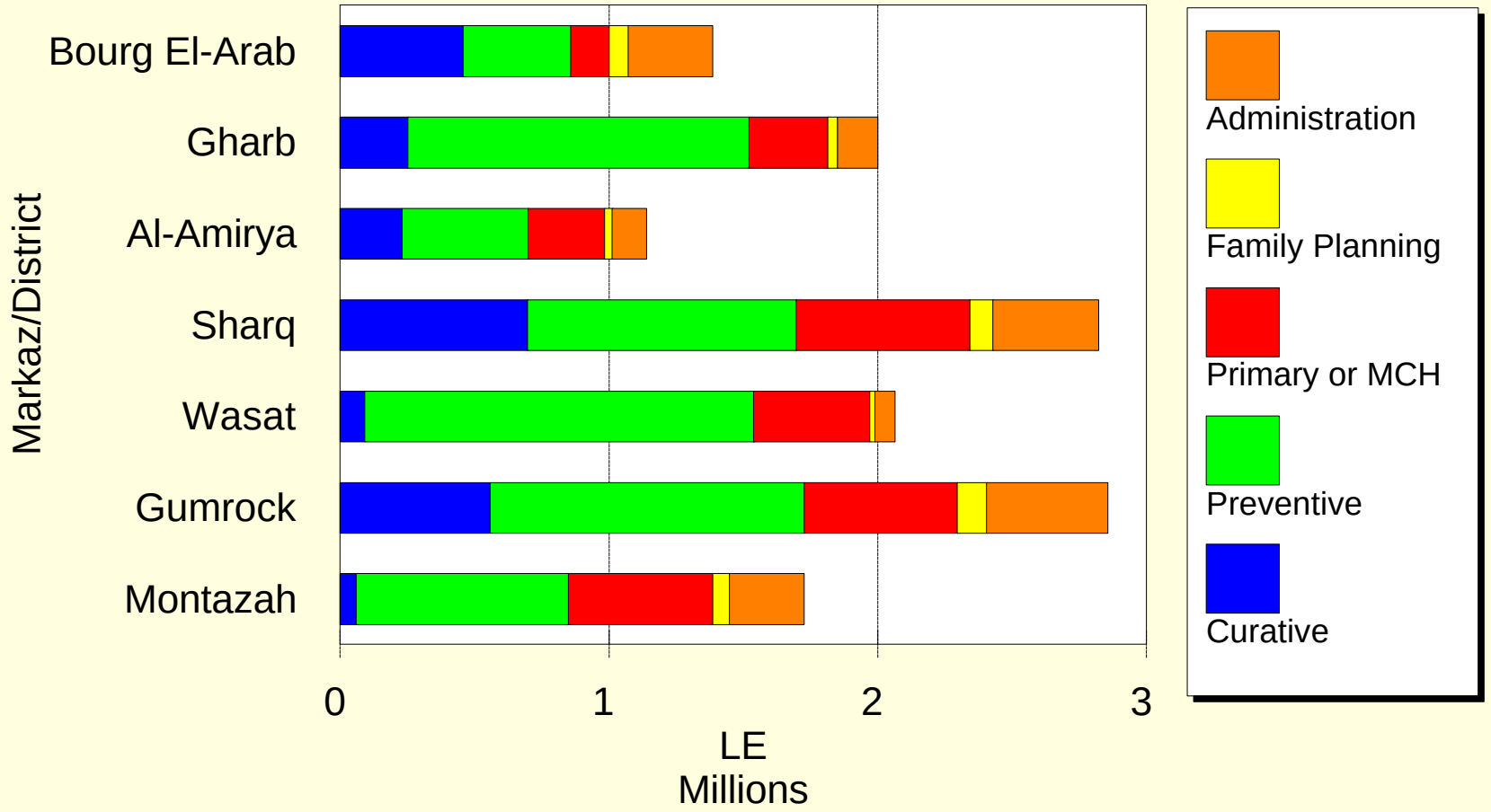
Alexandria 1992/1993



Rural Health Units, Health Groups, Urban Health Centers, Health Offices, Rural Hospitals, MCH Units

"Basic" Department

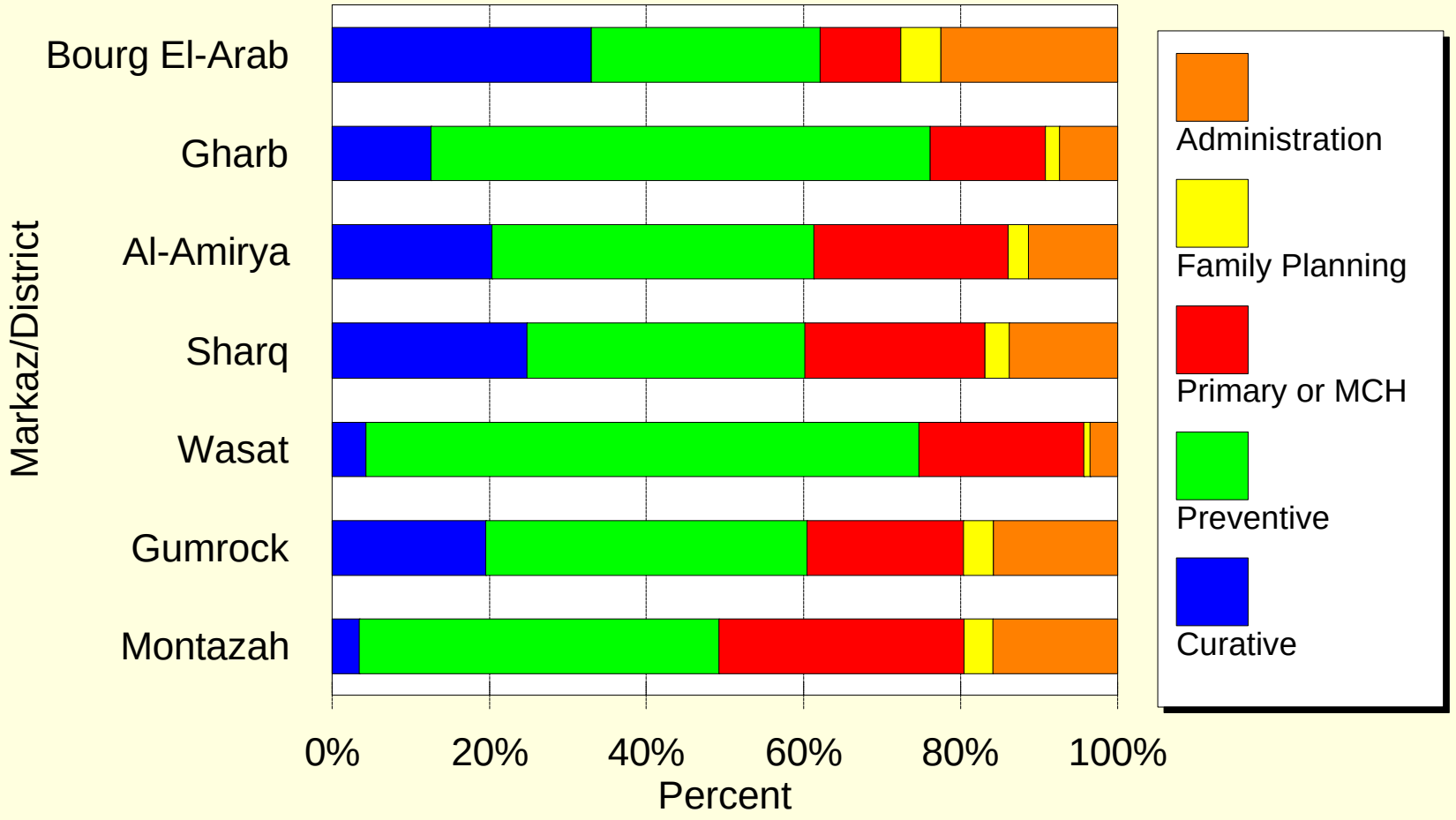
Alexandria 1992/1993



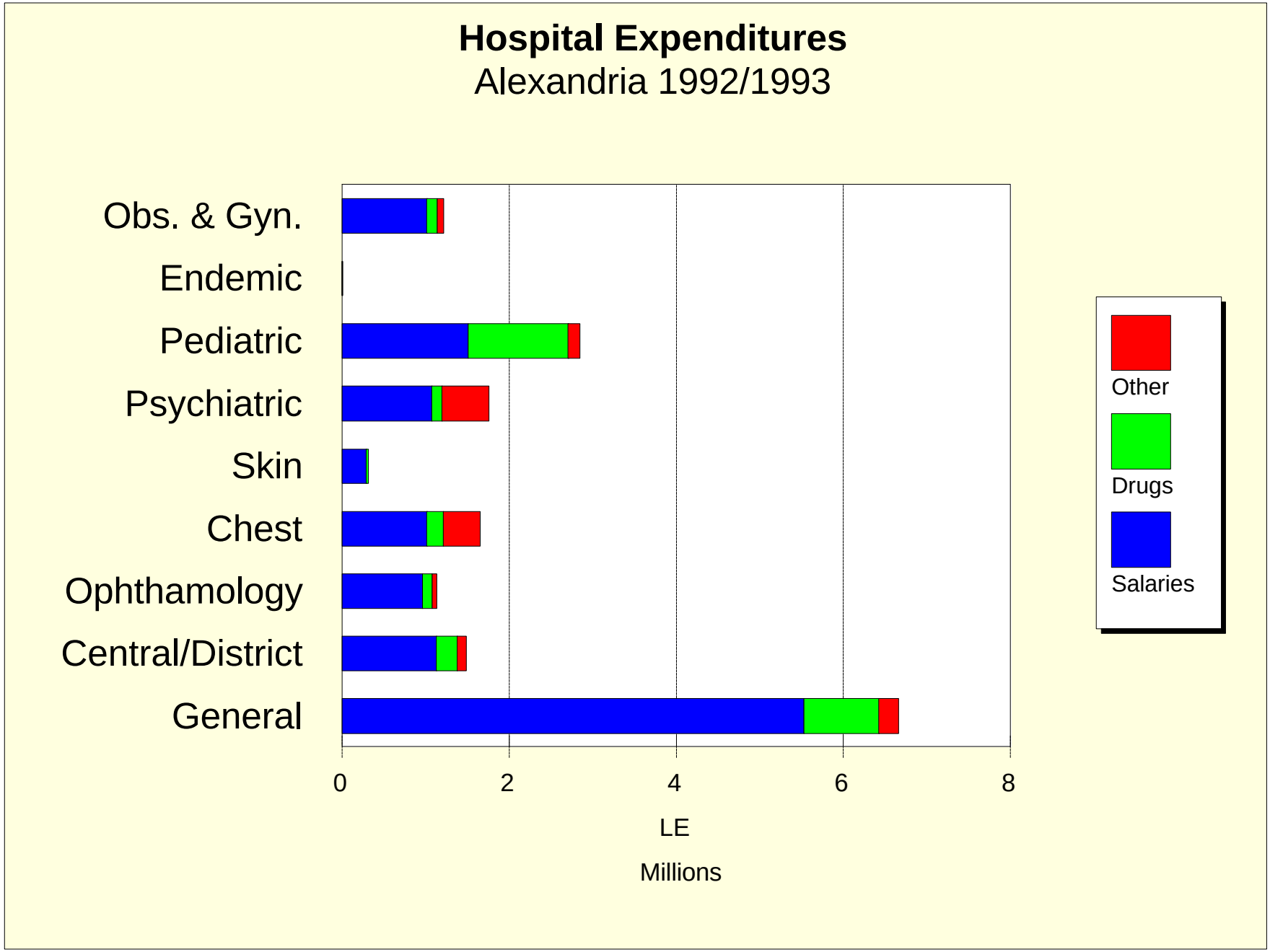
Rural Health Units, Health Groups, Urban Health Centers, Health Offices, Rural Hospitals, MCH Units

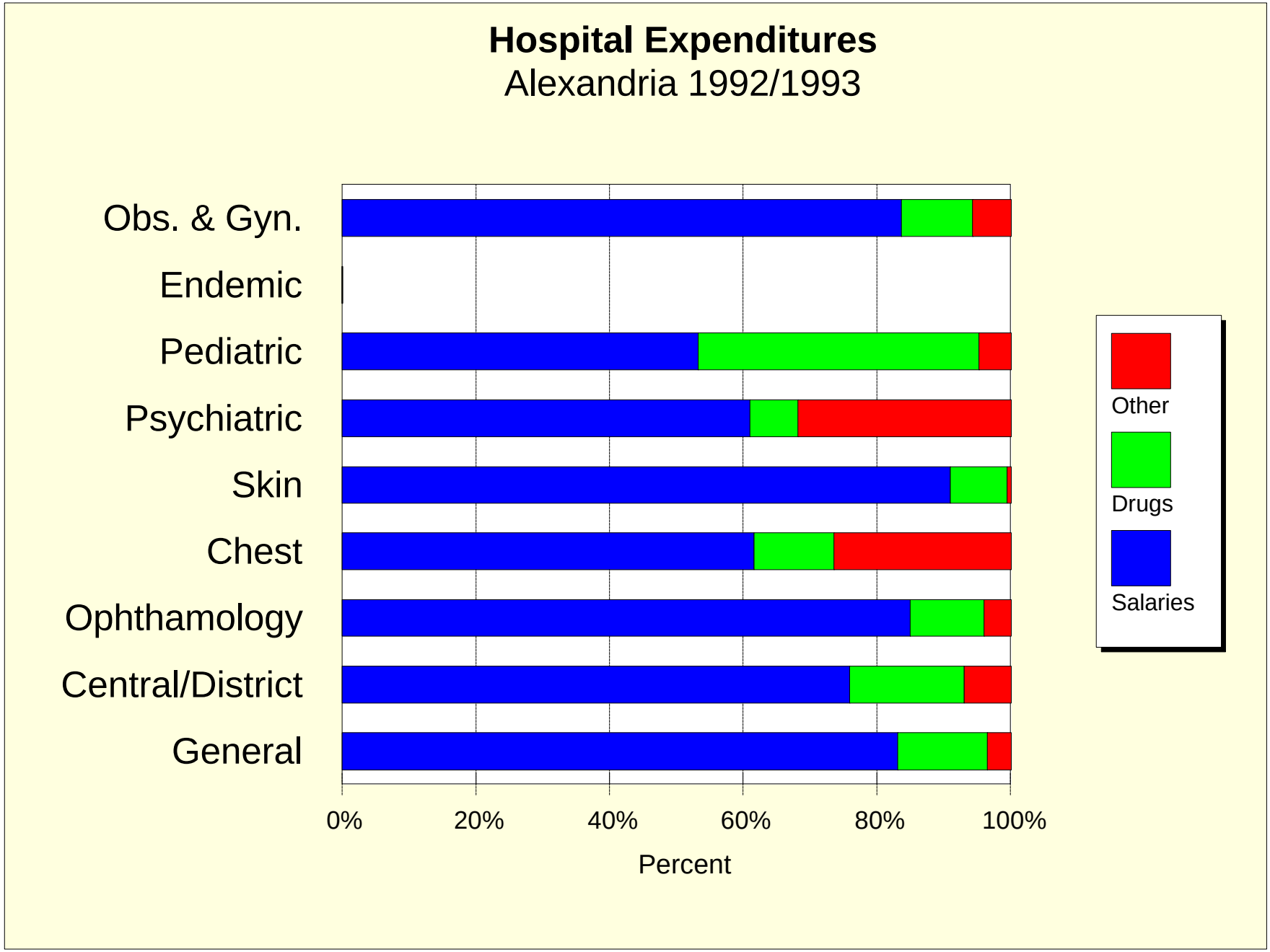
"Basic" Department

Alexandria 1992/1993



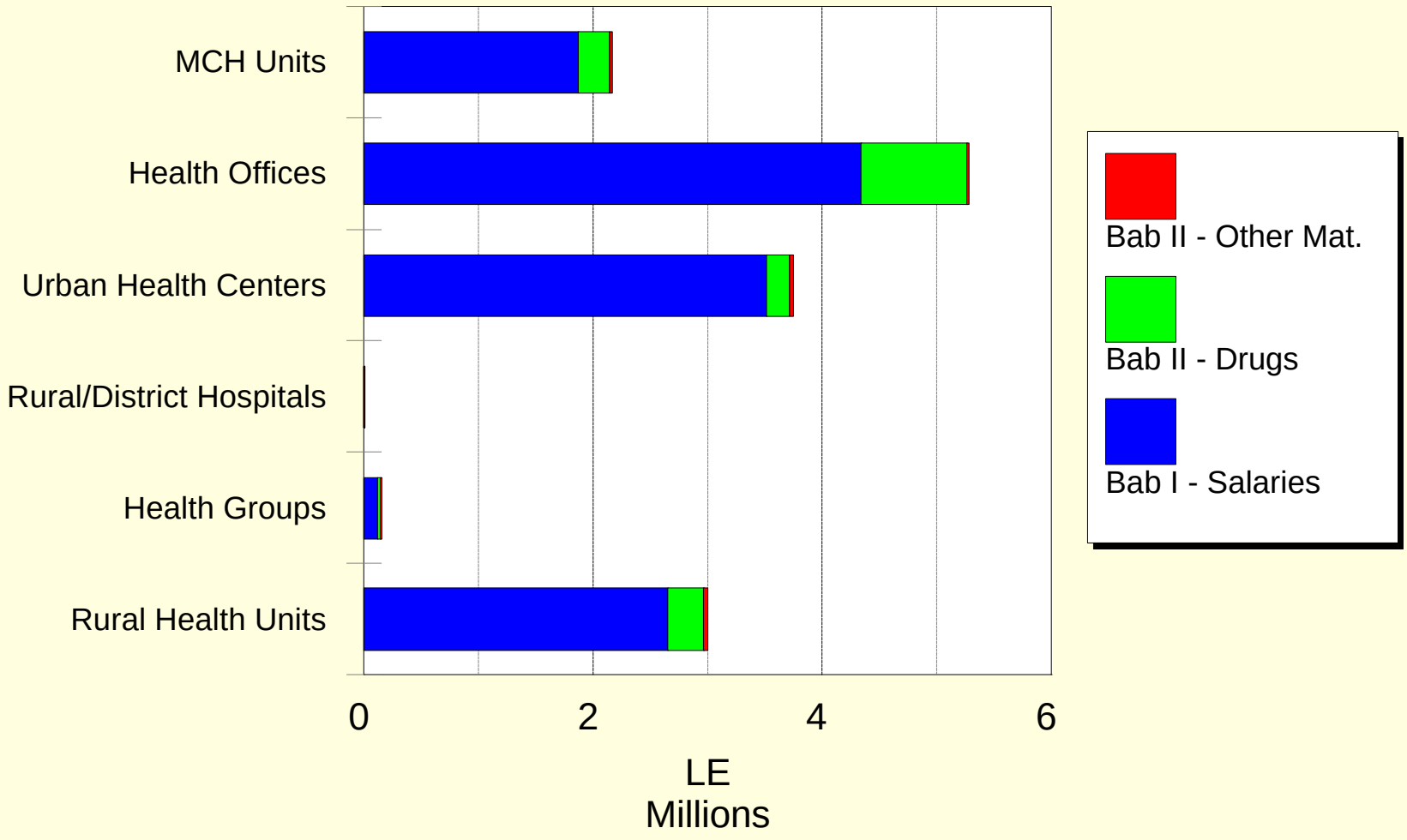
Rural Health Units, Health Groups, Urban Health Centers, Health Offices, Rural Hospitals, MCH Units


Hospital Expenditures
Alexandria 1992/1993
Obs. & Gyn.
Endemic
Pediatric
Psychiatric
Skin
Chest
Ophthamology
Central/District
General
0
2
4
6
8
LE
Millions
Other
Drugs
Salaries


Hospital Expenditures
Alexandria 1992/1993
Obs. & Gyn.
Endemic
Pediatric
Psychiatric
Skin
Chest
Ophthamology
Central/District
General
0%
20%
40%
60%
80%
100%
Percent
Other
Drugs
Salaries

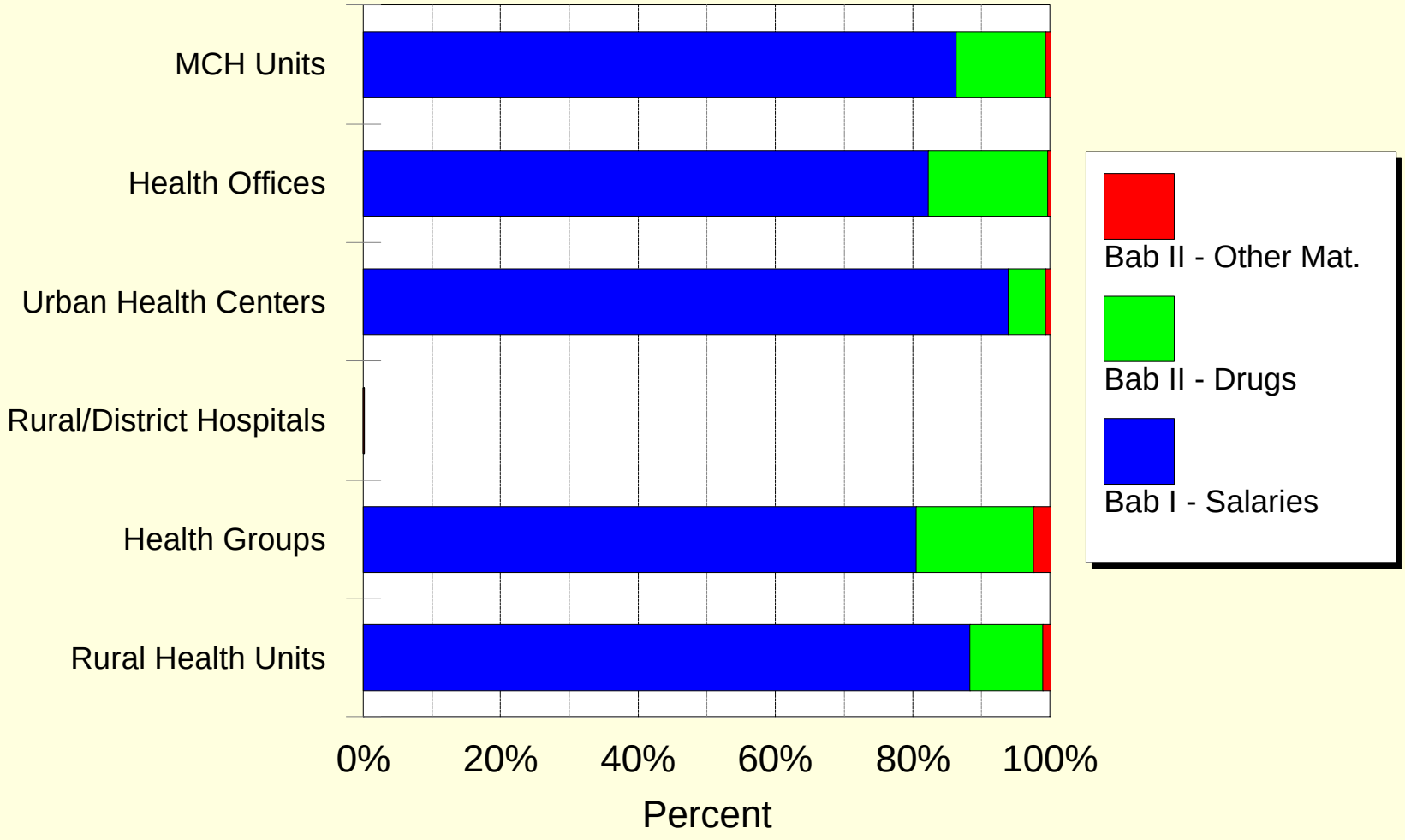
"Basic" Department

Alexandria - 1992/1993



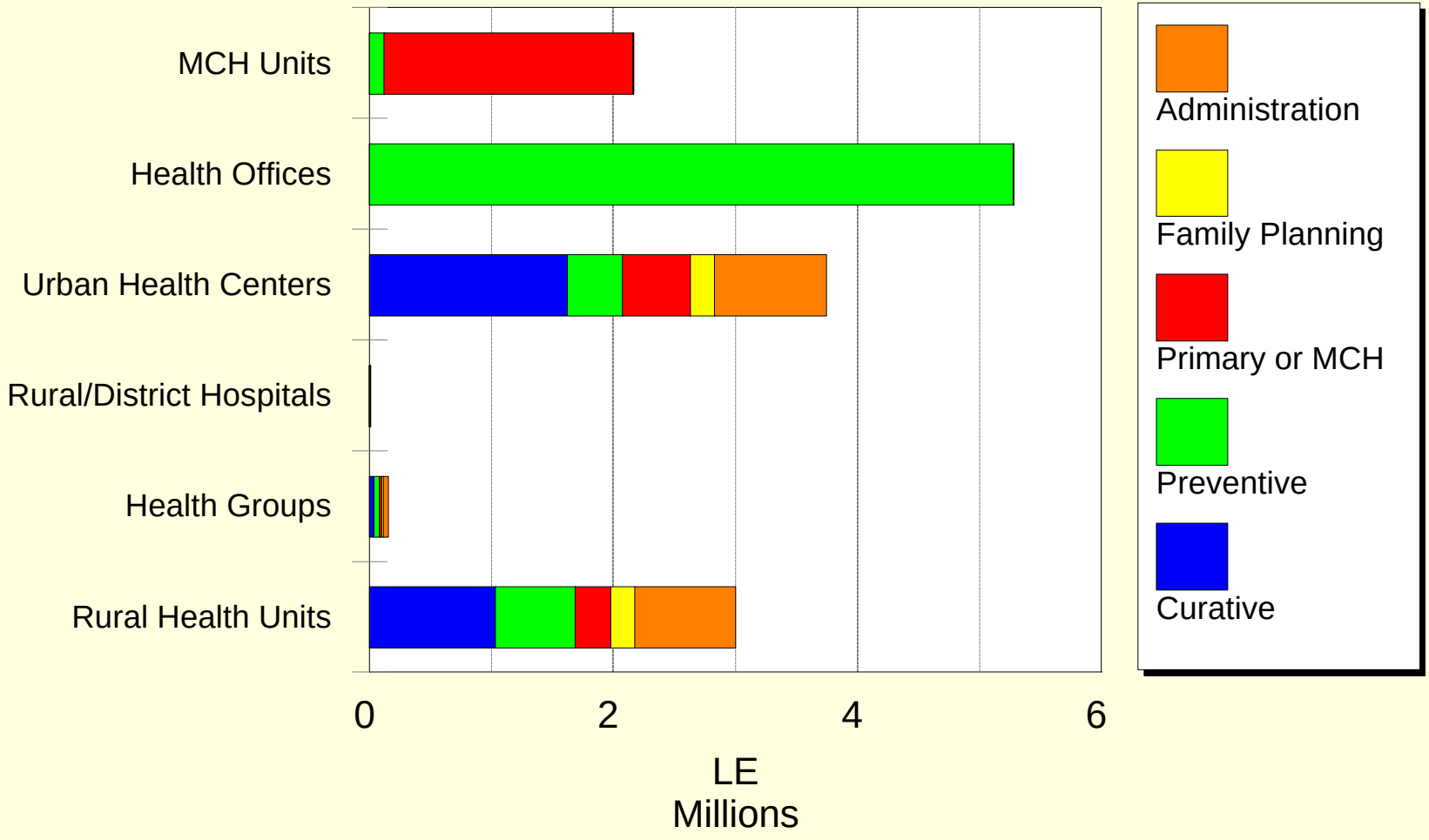
"Basic" Department

Alexandria - 1992/1993



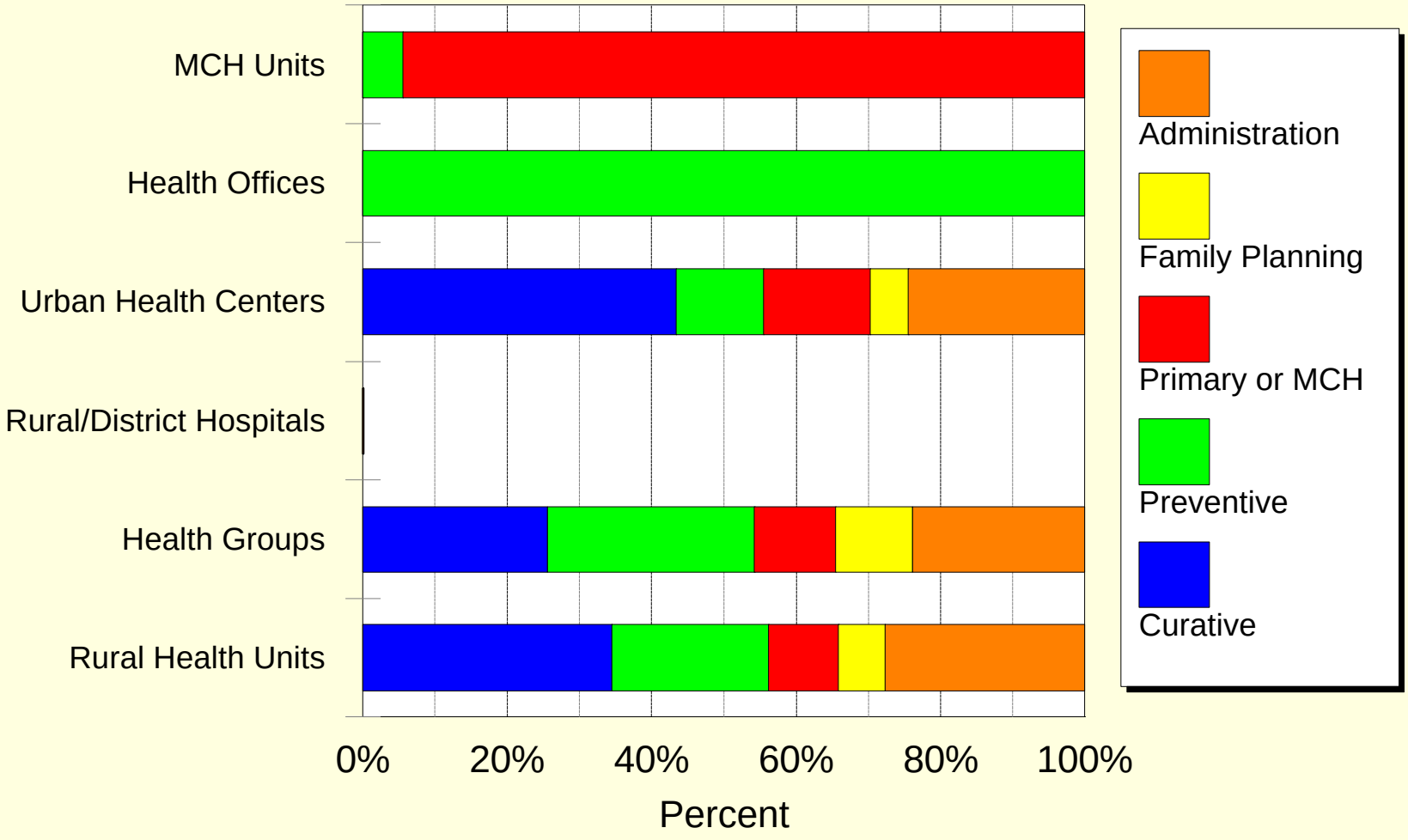
"Basic" Department

Alexandria - 1992/1993



"Basic" Department

Alexandria - 1992/1993

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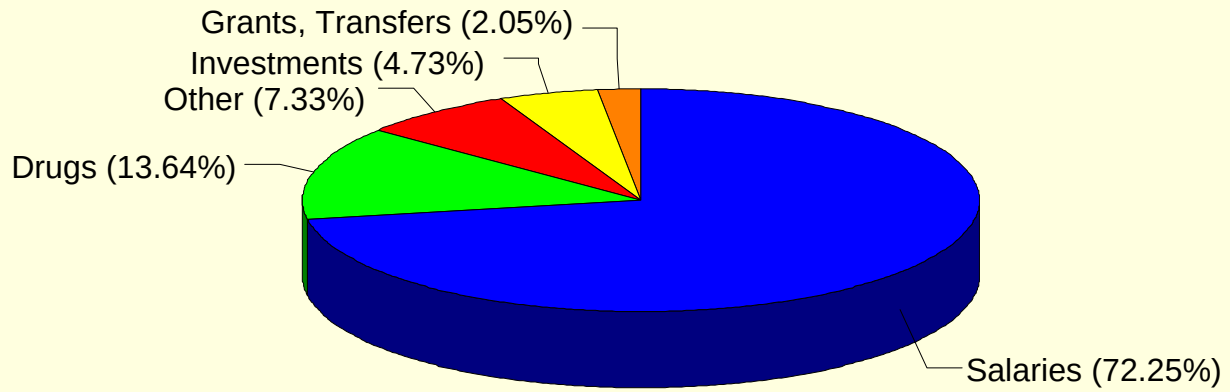
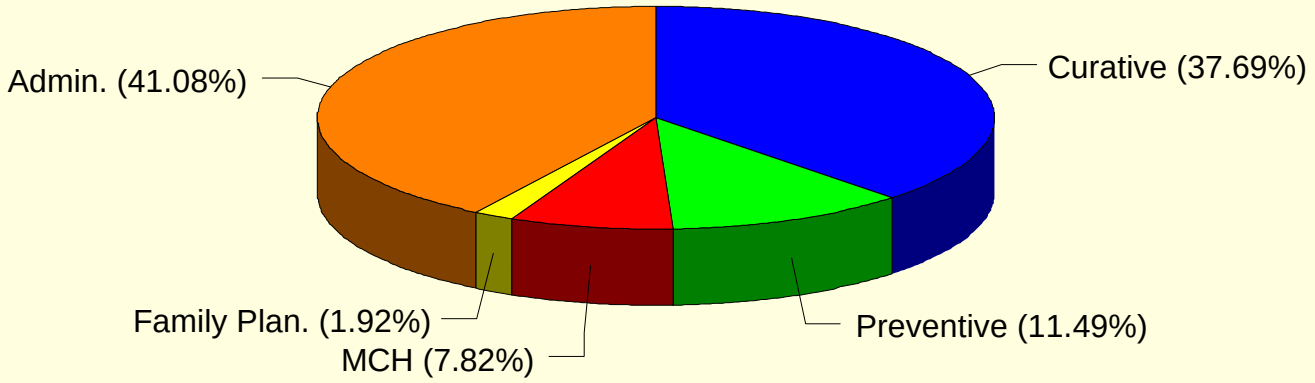
1992/1993

Budget Categories

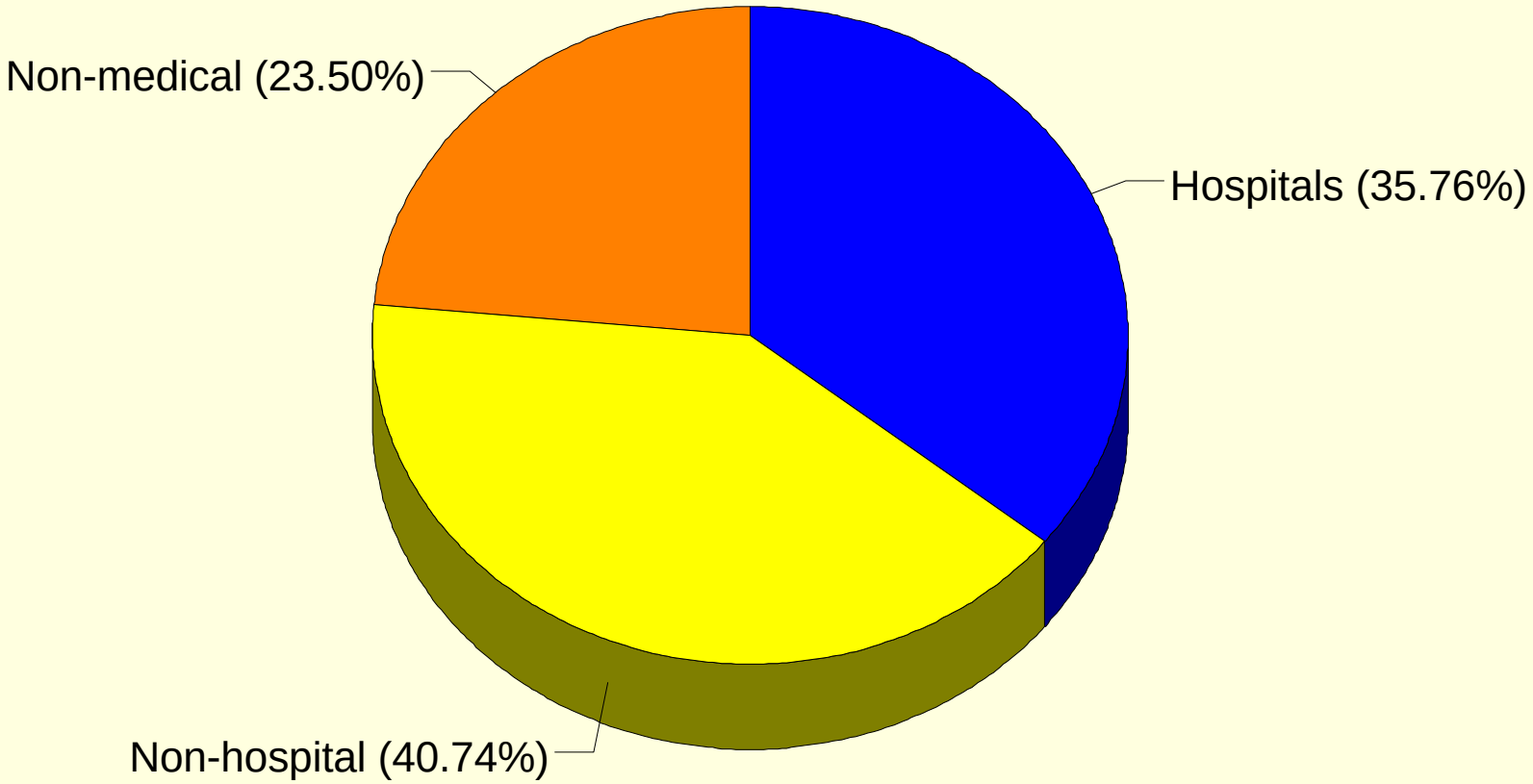


Functional Categories



Hospital Vs Non-Hospital Expenditures

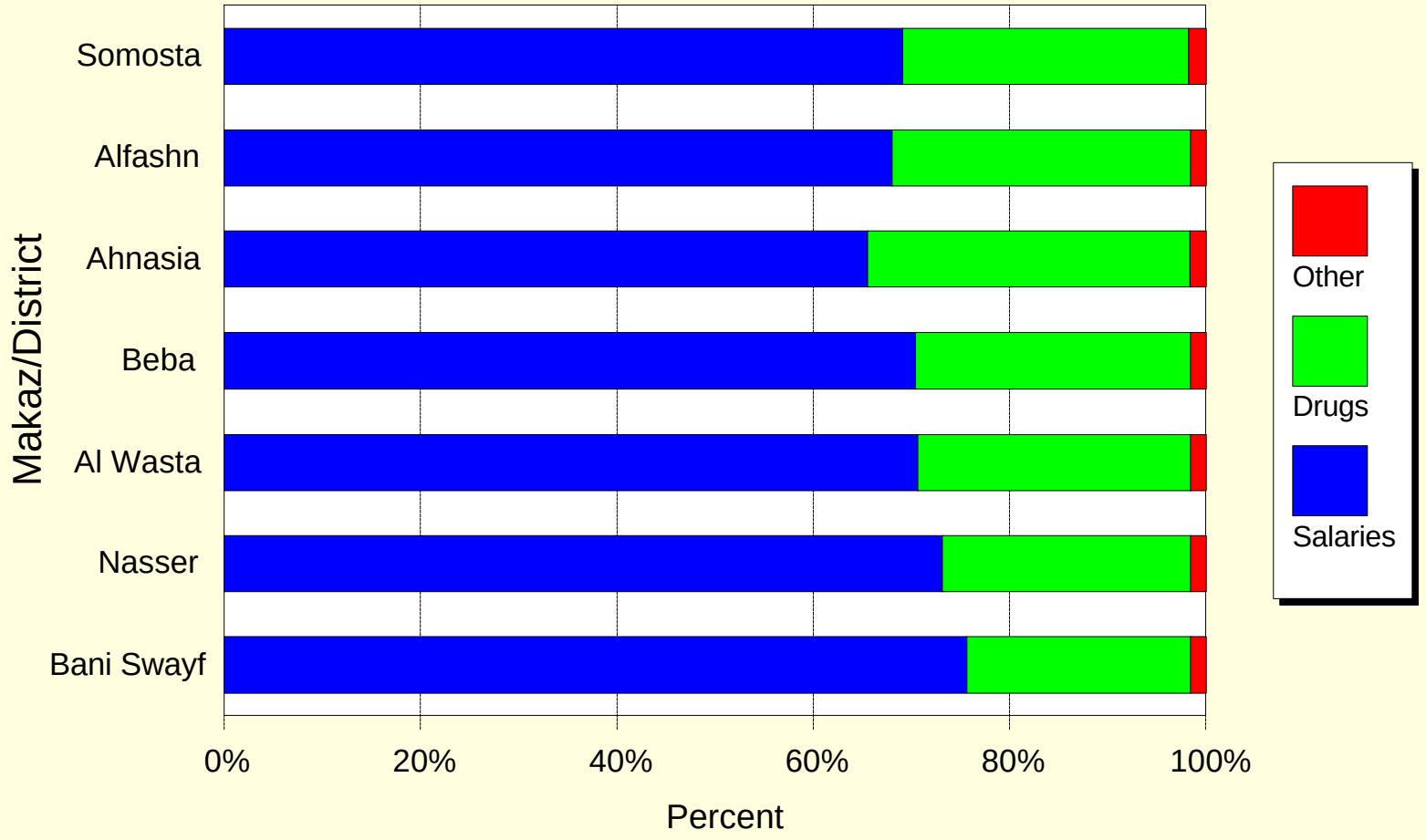
Beni Suef 1992/1993



Hospitals include General, Central, Specialized, Fever, and Rural or District Hospitals. Non-hospital facilities include all health care units that are not classified as hospitals. Non-medical units are administrative and support units that do not directly service a medical function.

"Basic" Department

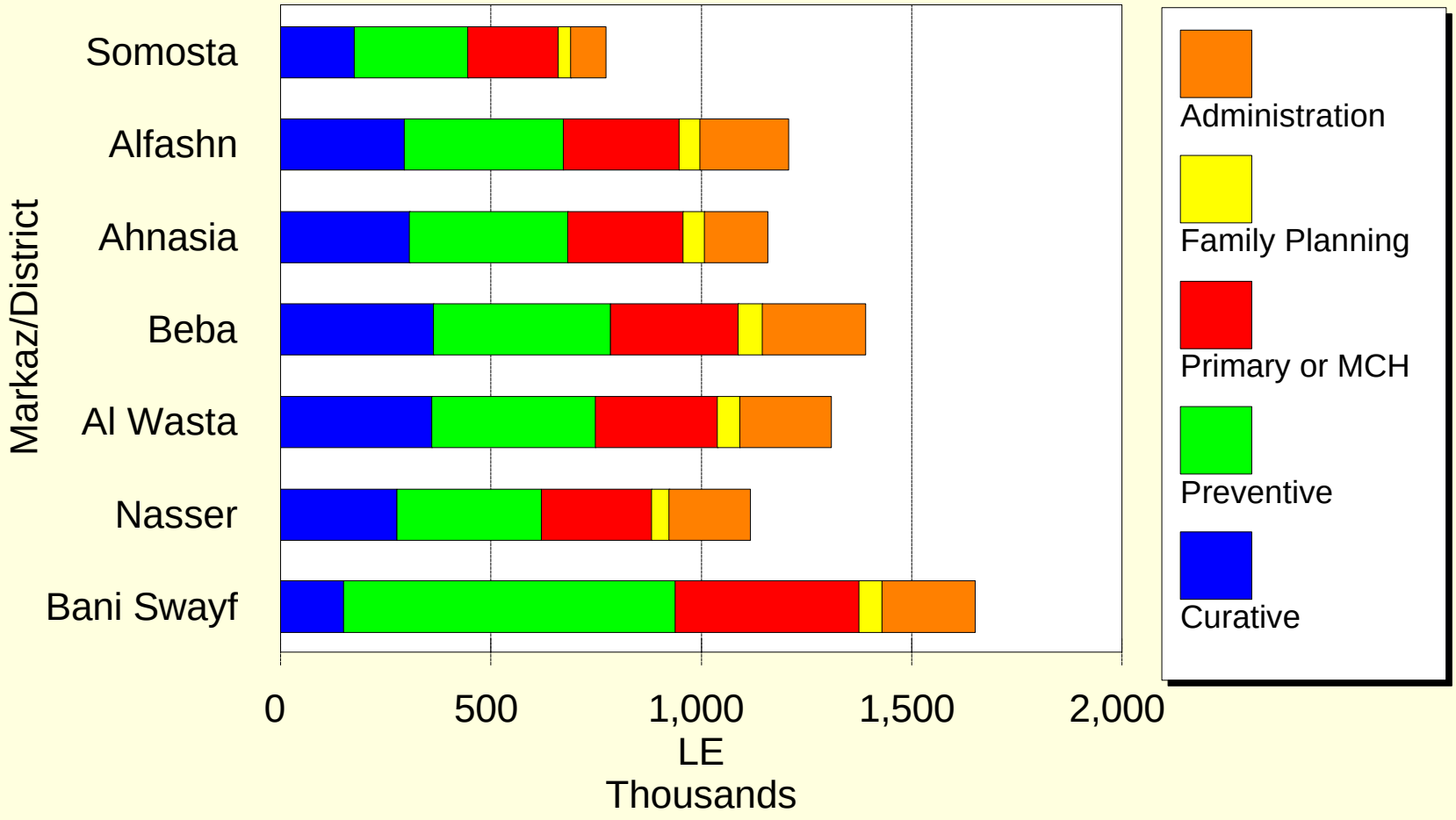
Beni Suef 1992/1993



Rural Health Units, Health Groups, Urban Health Centers, Health Offices, Rural Hospitals, MCH Units

"Basic" Department

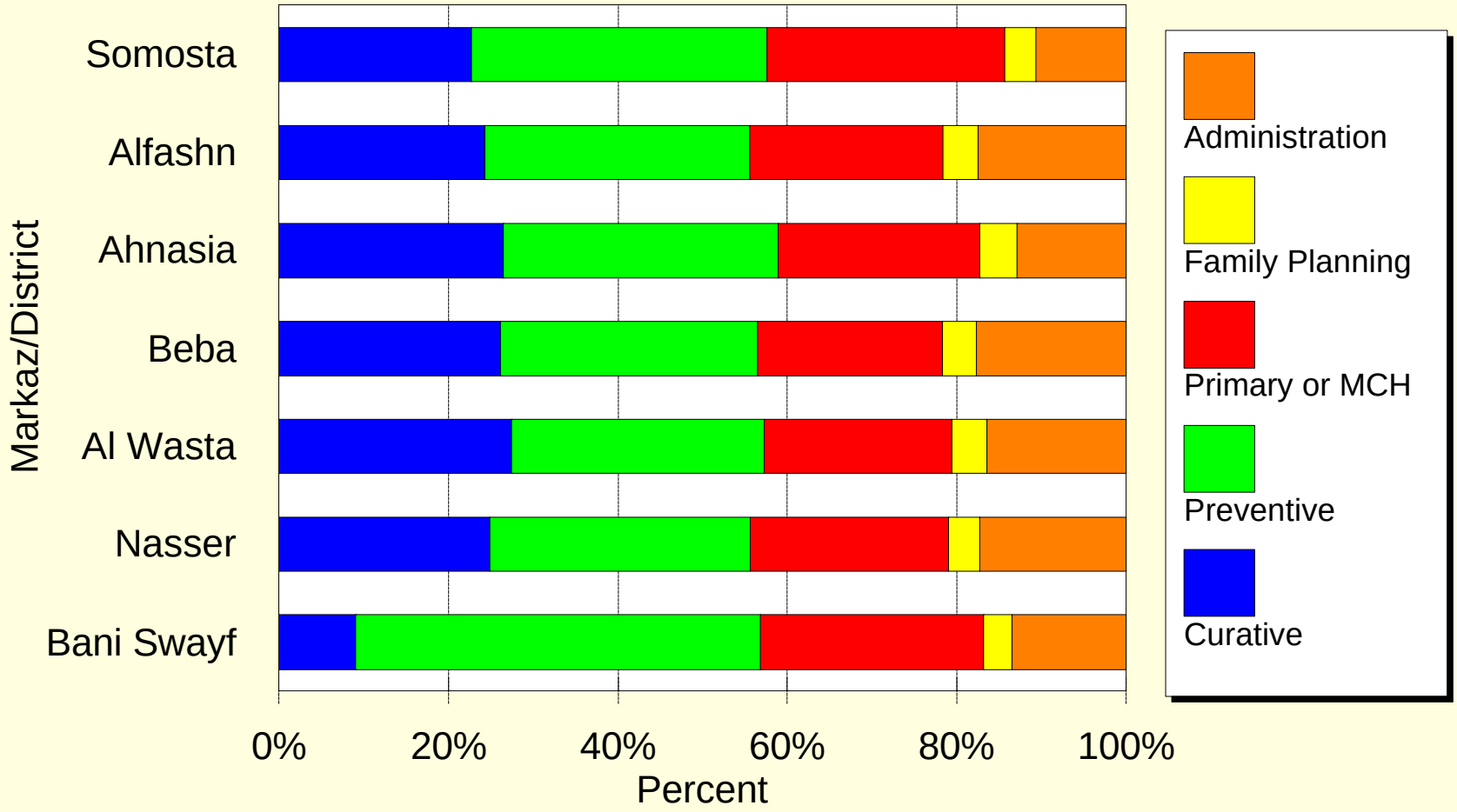
Beni Suef 1992/1993



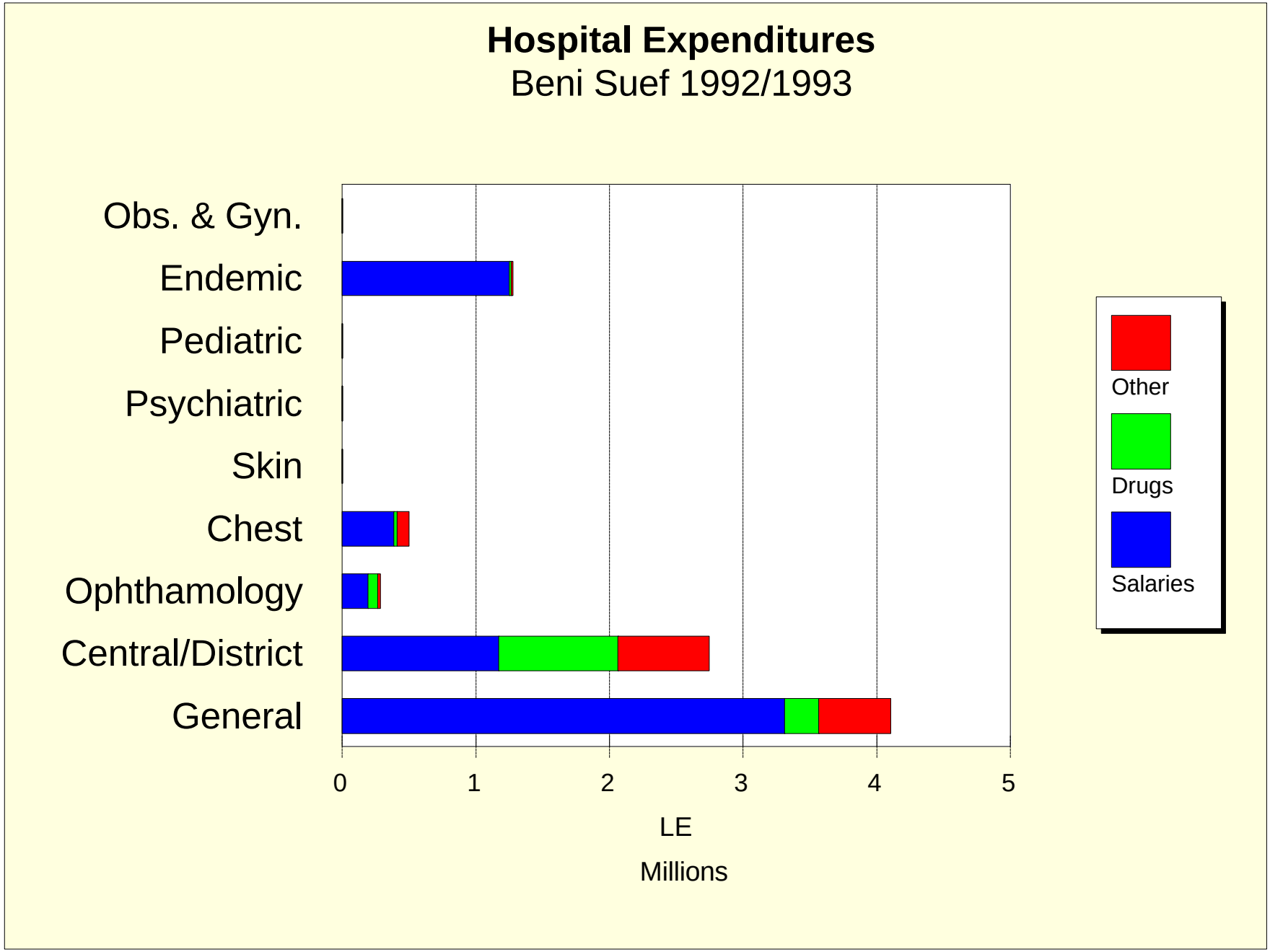
Rural Health Units, Health Groups, Urban Health Centers, Health Offices, Rural Hospitals, MCH Units

"Basic" Department

Beni Suef1992/1993



Rural Health Units, Health Groups, Urban Health Centers, Health Offices, Rural Hospitals, MCH Units


Hospital Expenditures
Beni Suef 1992/1993
Obs. & Gyn.
Endemic
Pediatric
Psychiatric
Skin
Chest
Ophthamology
Central/District
General
0
1
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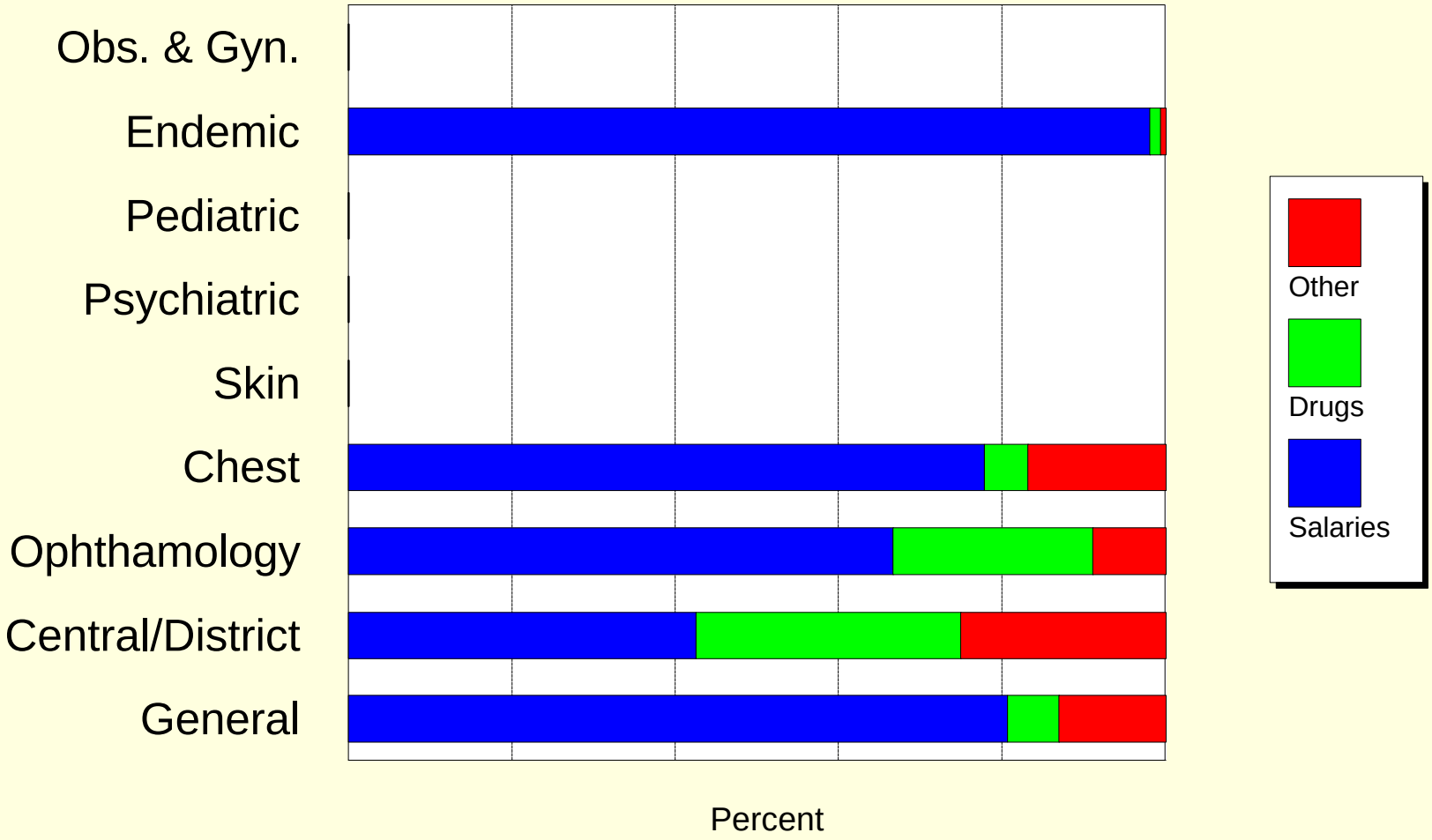
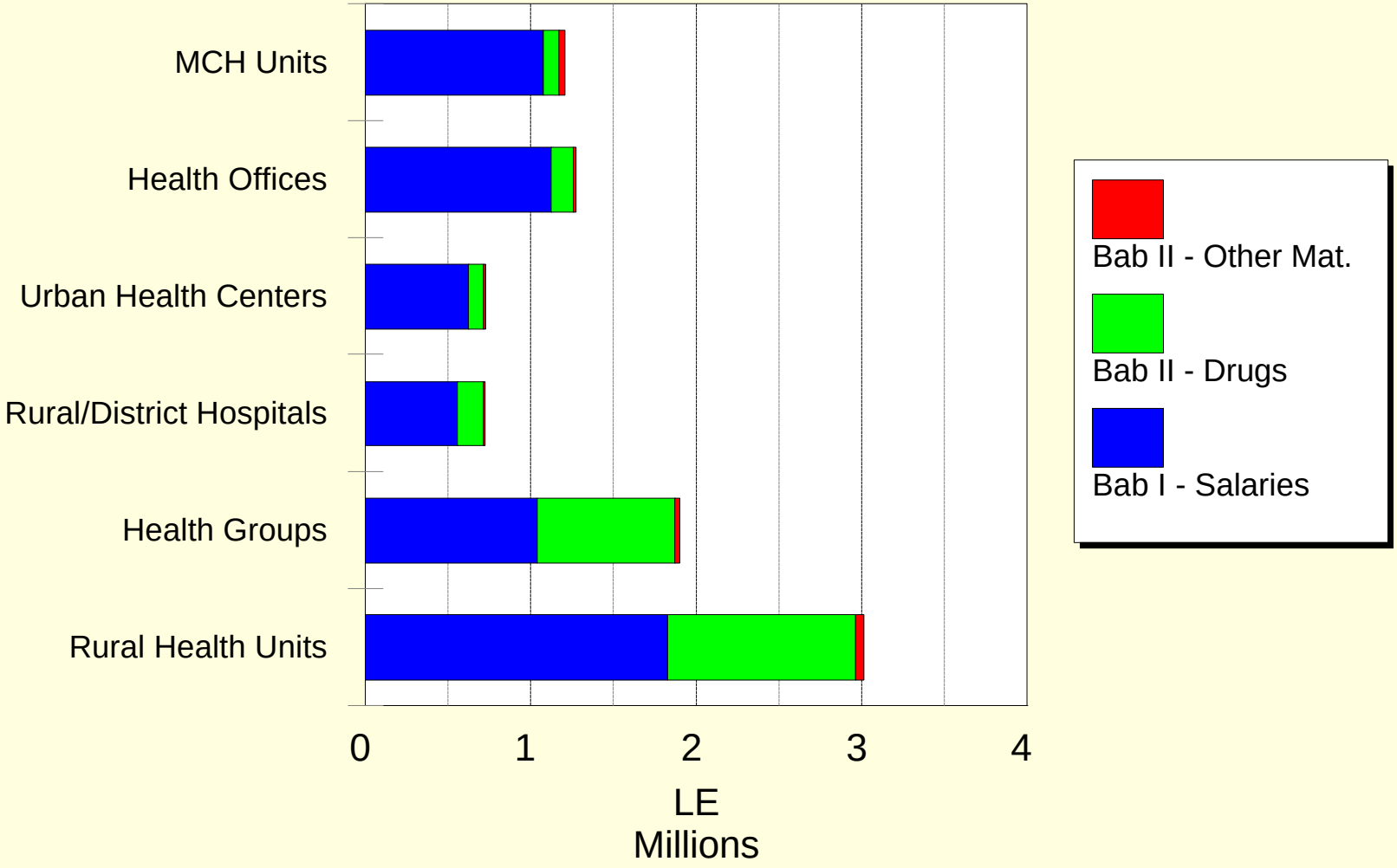
5
LE
Millions
Other
Drugs
Salaries

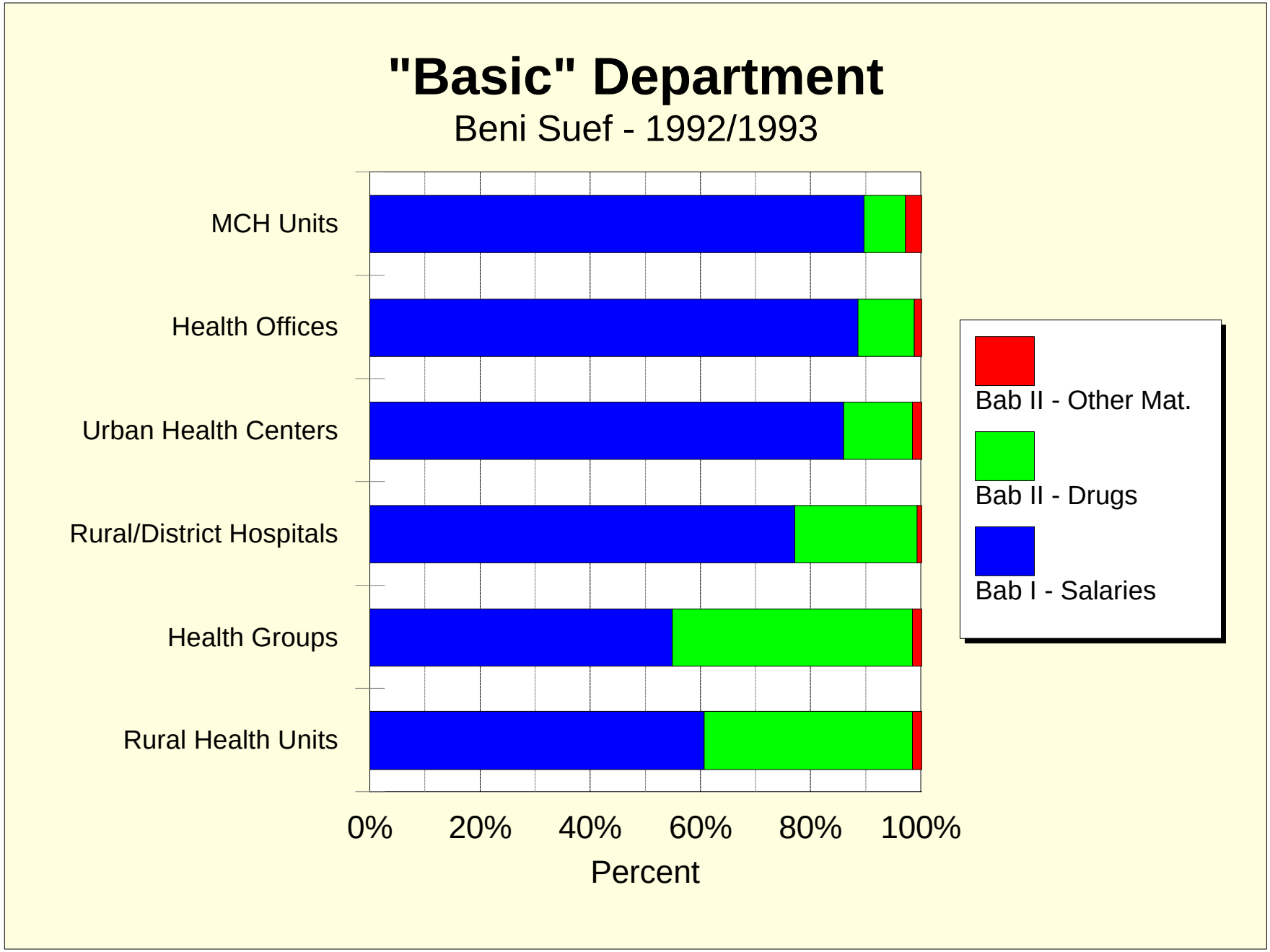
Hospital Expenditures
Beni Suef 1992/1993



"Basic" Department

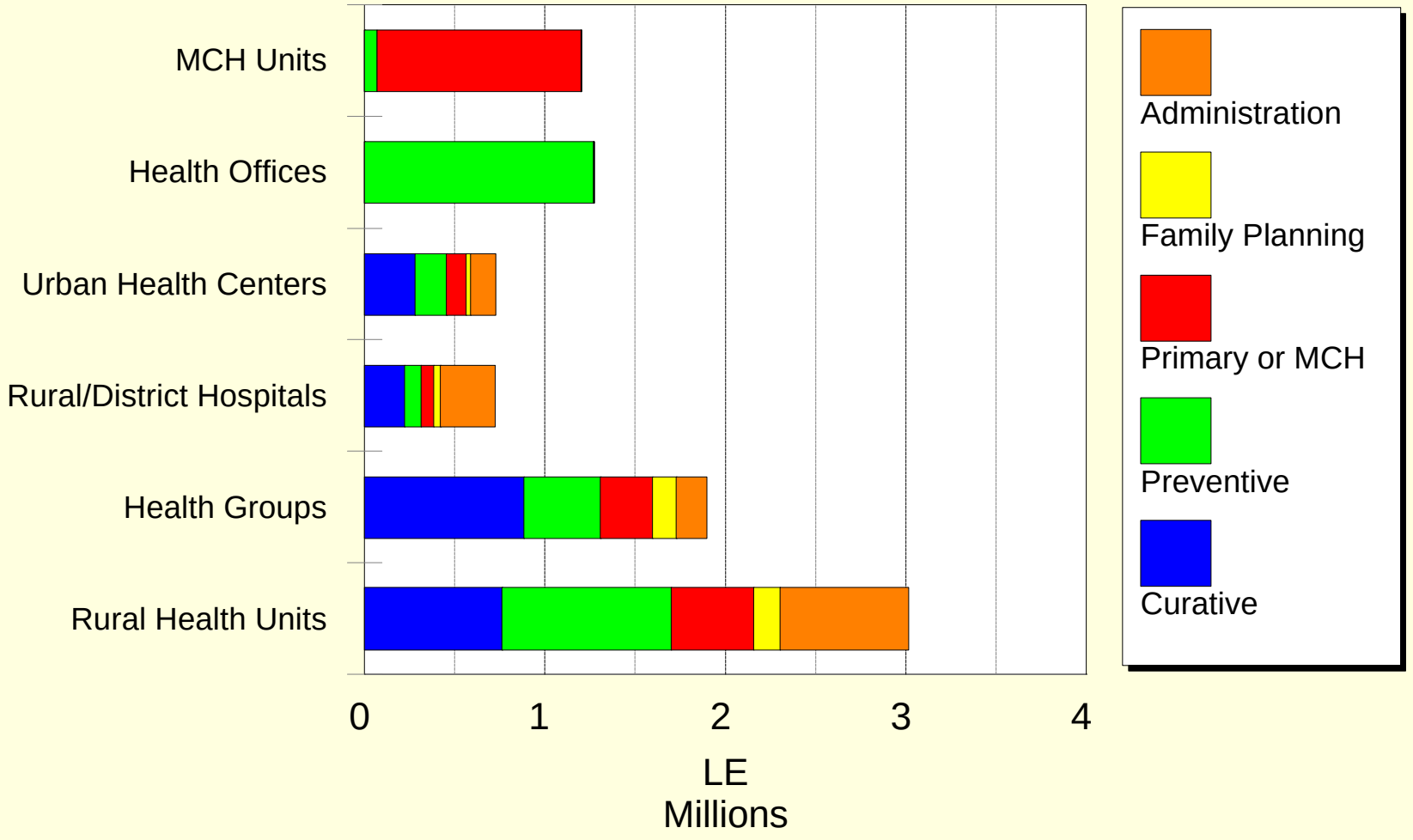
Beni Suef- 1992/1993




"Basic" Department
Beni Suef - 1992/1993
MCH Units
Health Offices
Urban Health Centers
Rural/District Hospitals
Health Groups
Rural Health Units
0%
20%
40%
60%
80%
100%
Percent
Bab II - Other Mat.
Bab II - Drugs
Bab I - Salaries

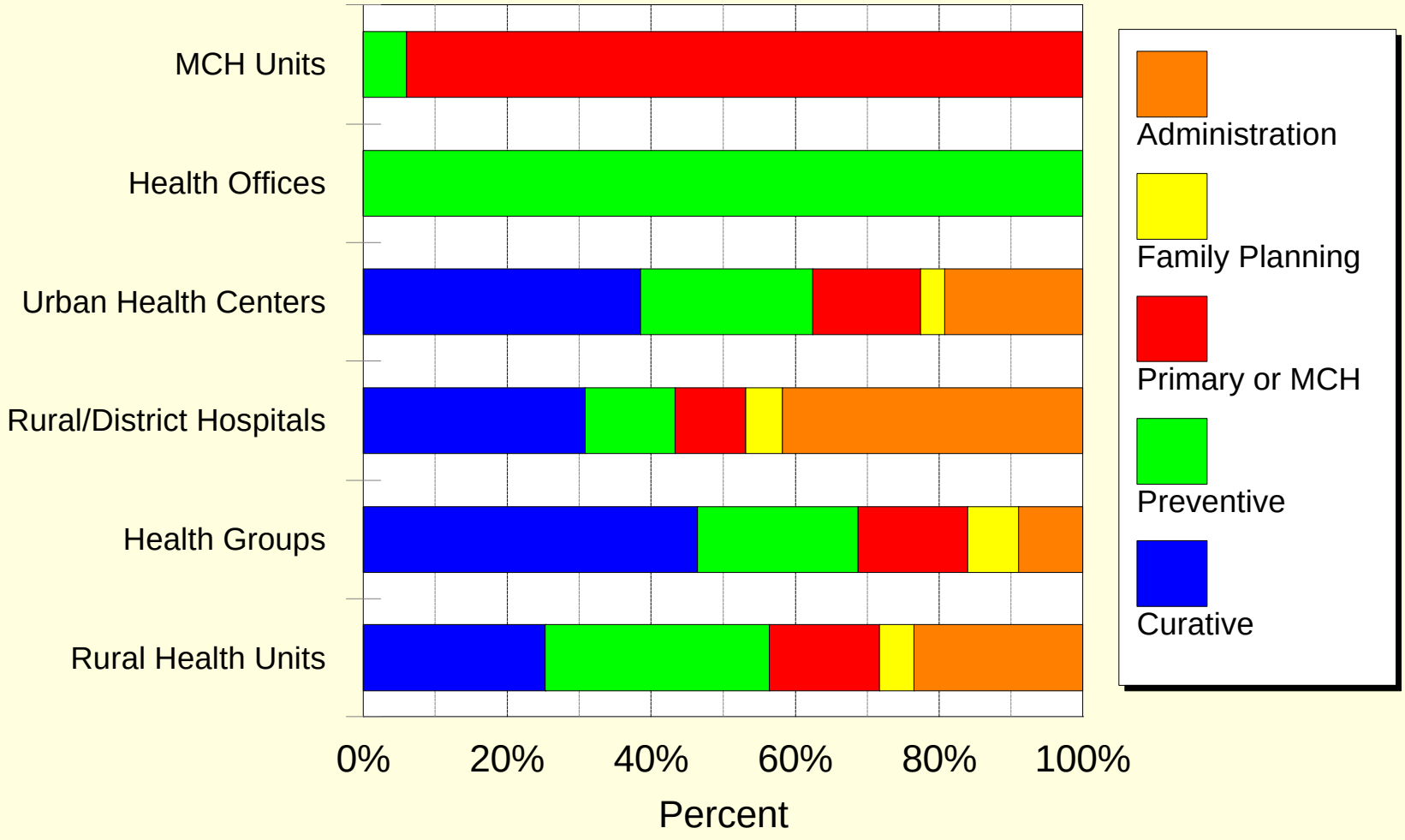
"Basic" Department

Beni Suef - 1992/1993



"Basic" Department

Beni Suef - 1992/1993

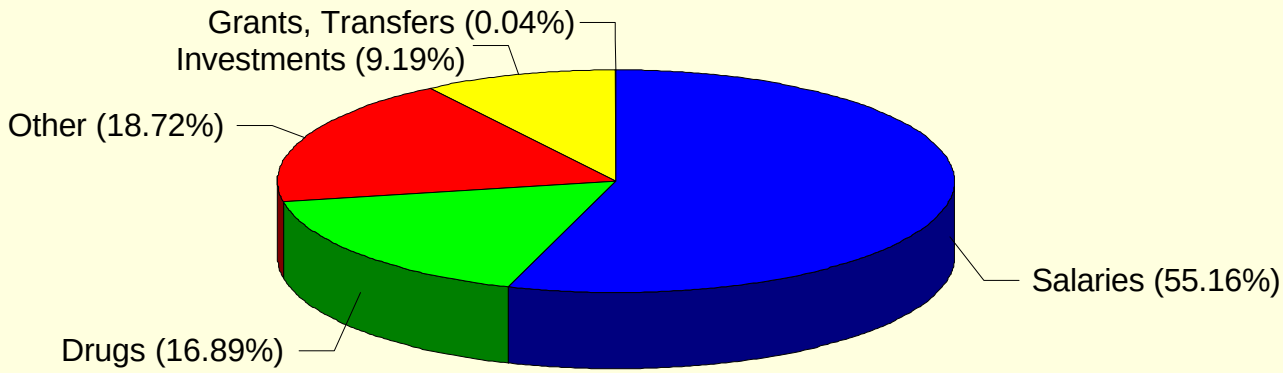



Suez
Suez

Suez

1992/1993

Budget Categories



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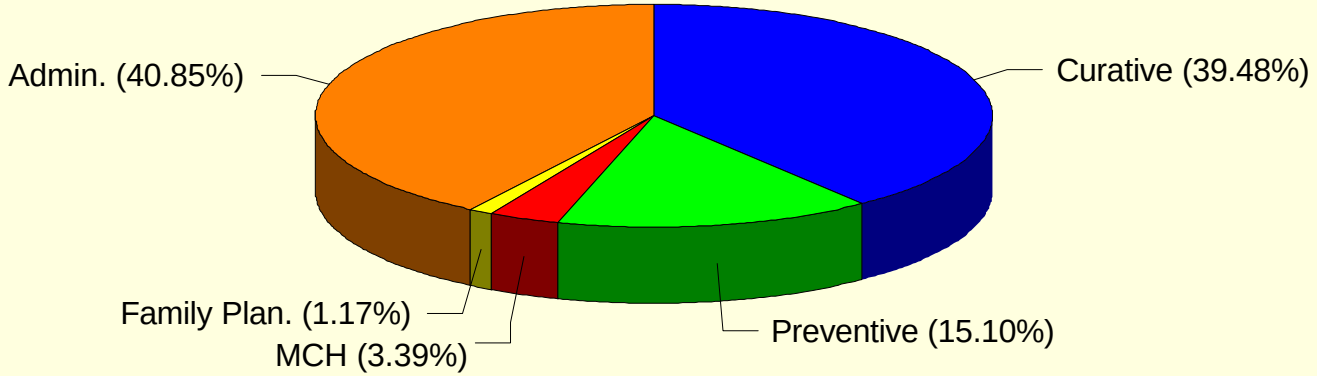
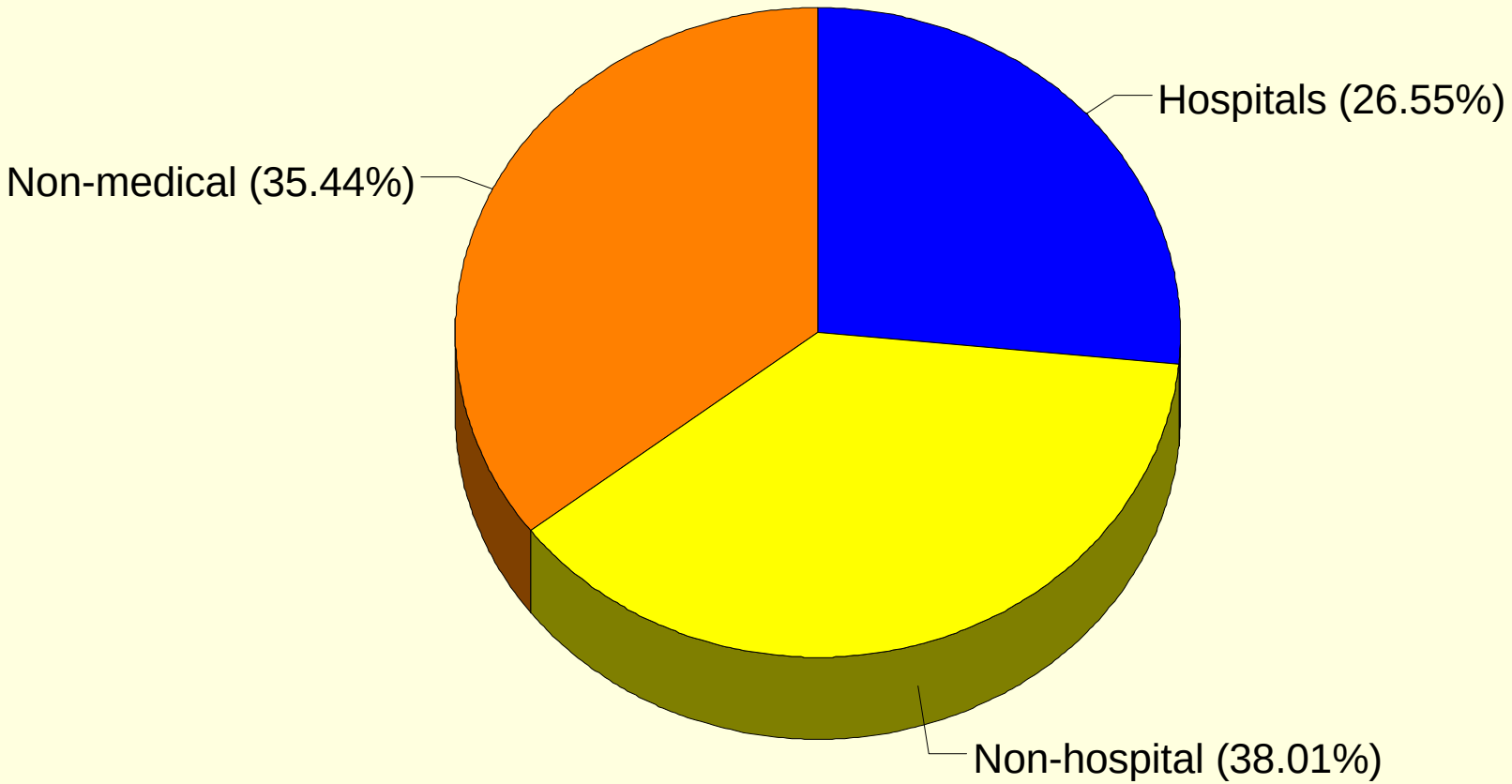


Hospital Vs Non-Hospital Expenditures

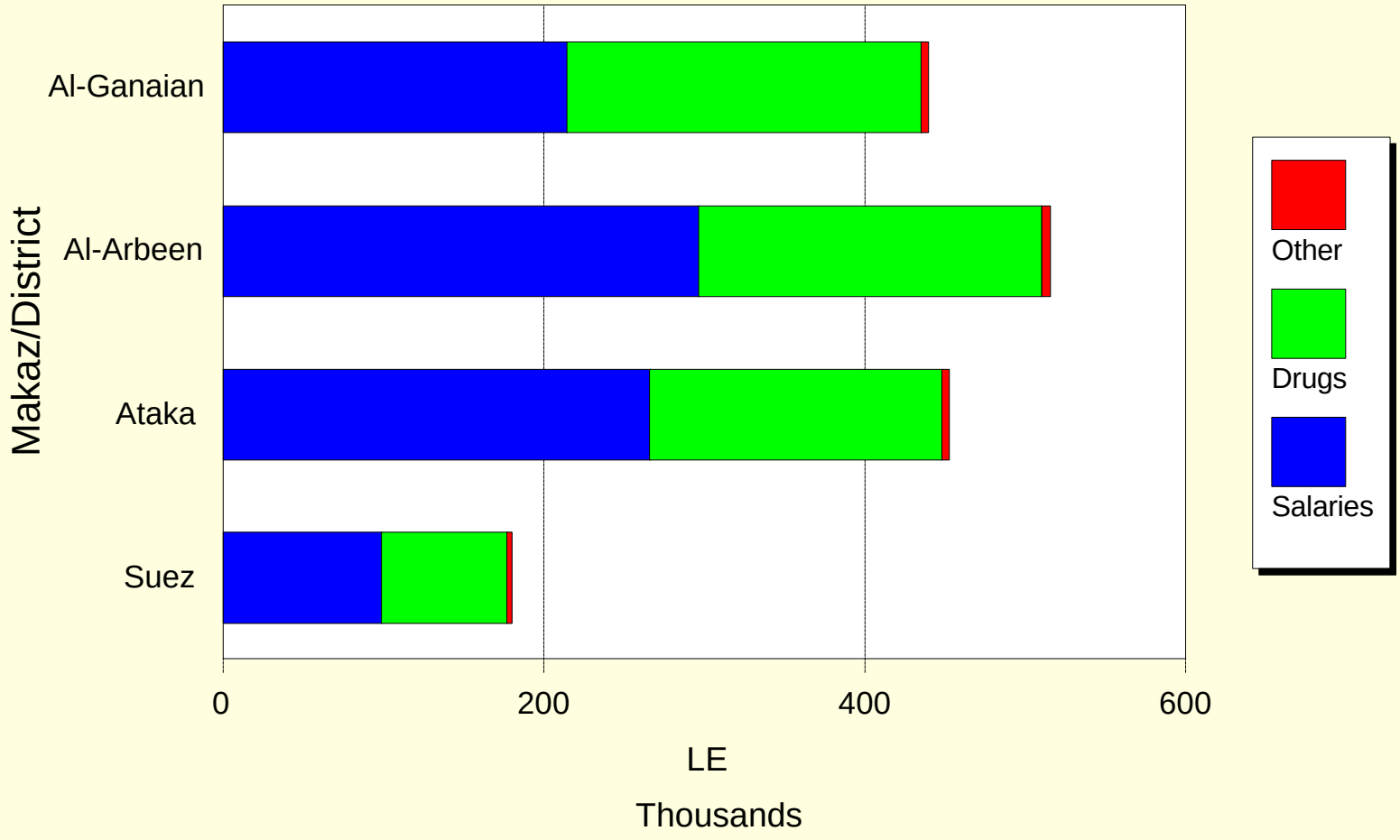
Suez 1992/1993



Hospitals include General, Central, Specialized, Fever, and Rural or District Hospitals. Non-hospital facilities include all health care units that

"Basic" Department

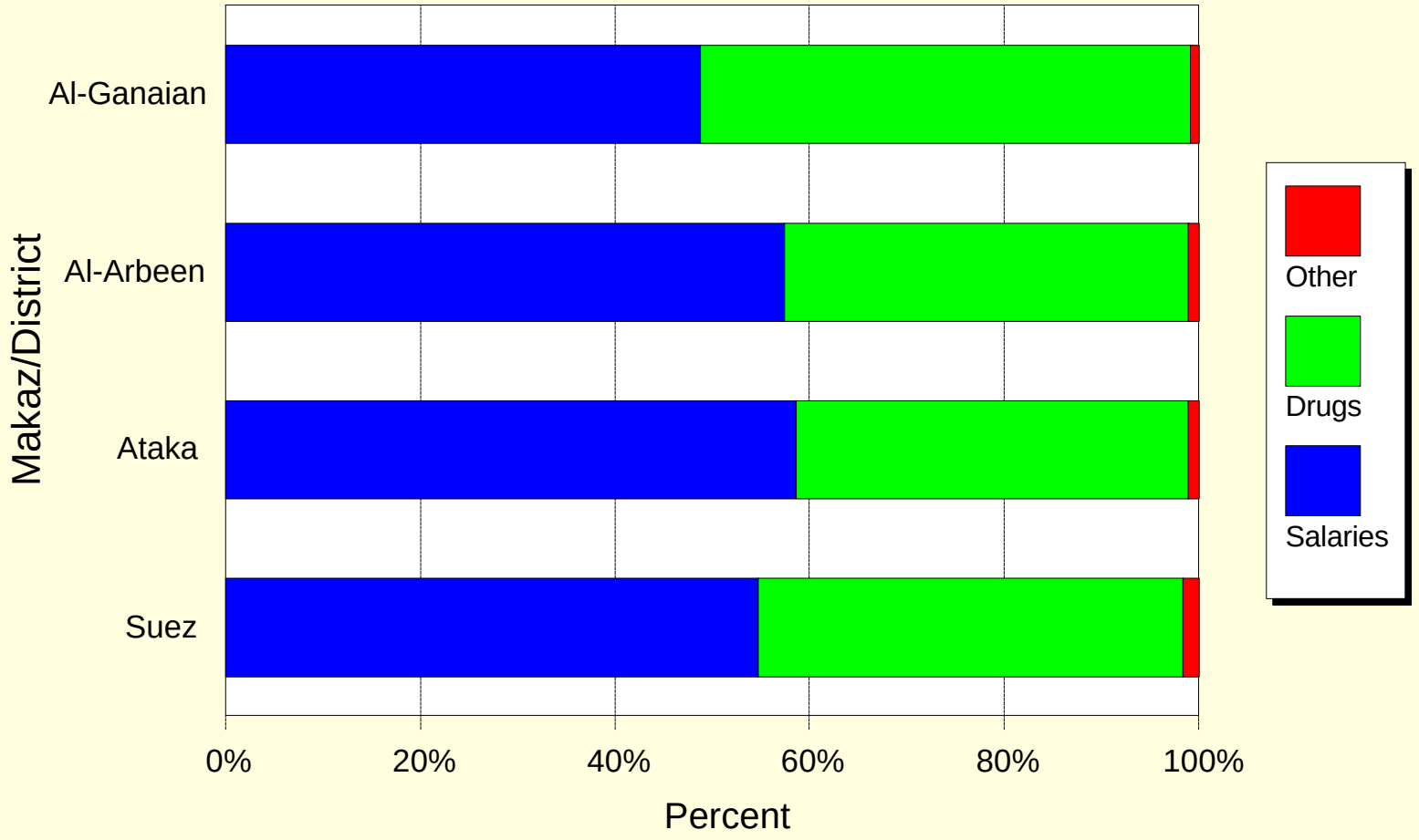
Suez 1992/1993



Rural Health Units, Health Groups, Urban Health Centers, Health Offices, Rural Hospitals, MCH Units

"Basic" Department

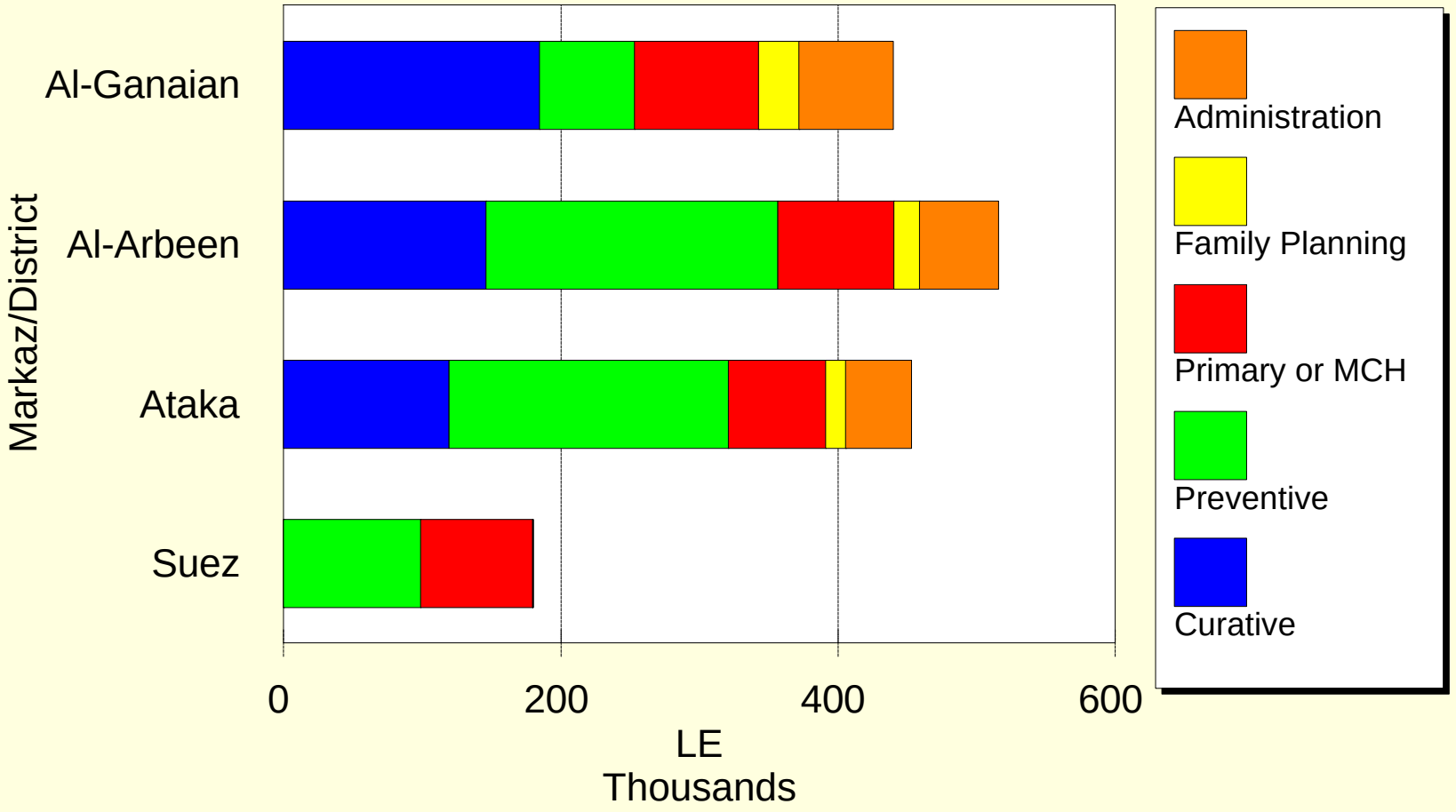
Suez 1992/1993



Rural Health Units, Health Groups, Urban Health Centers, Health Offices, Rural Hospitals, MCH Units

"Basic" Department

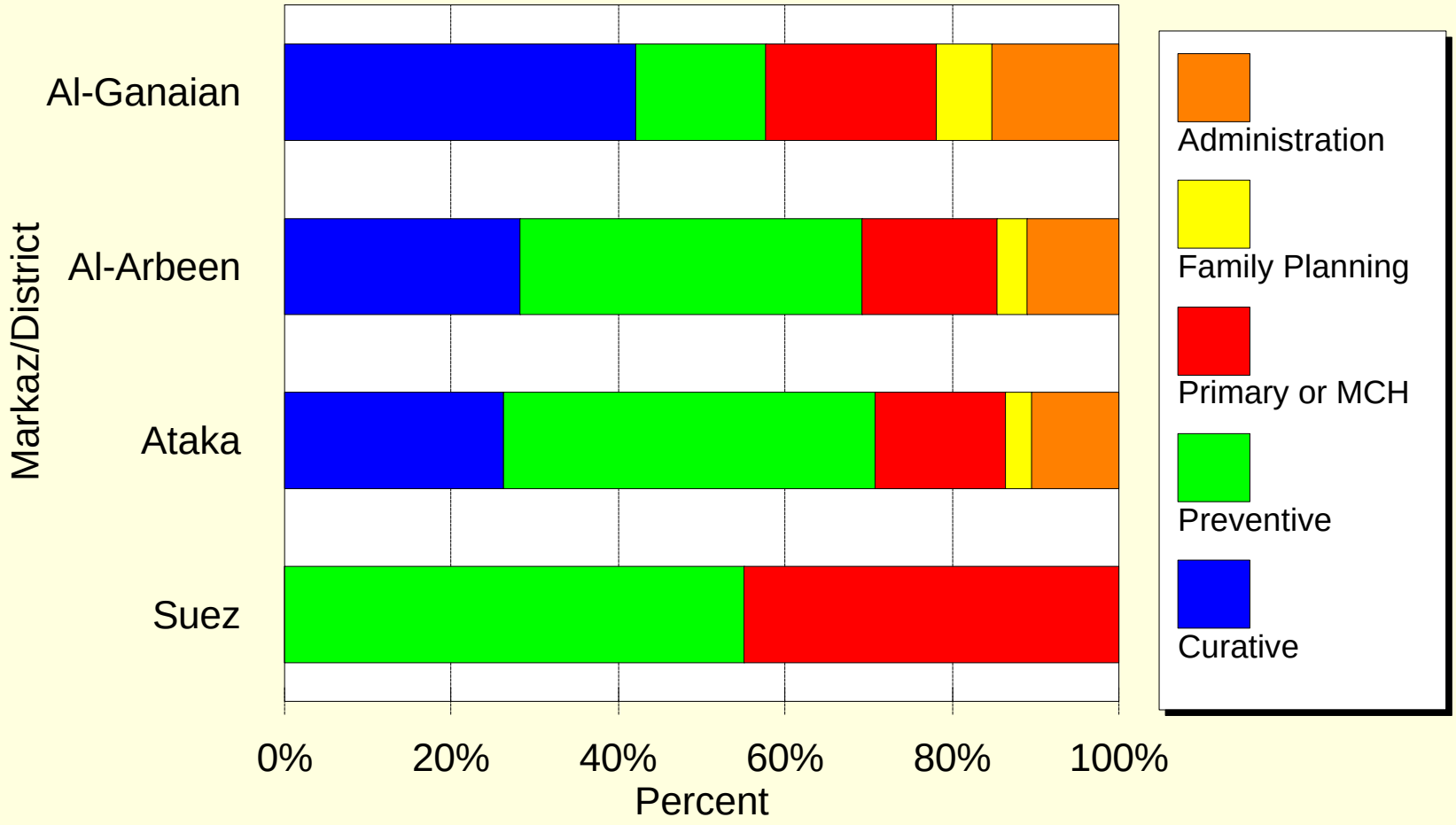
Suez 1992/1993



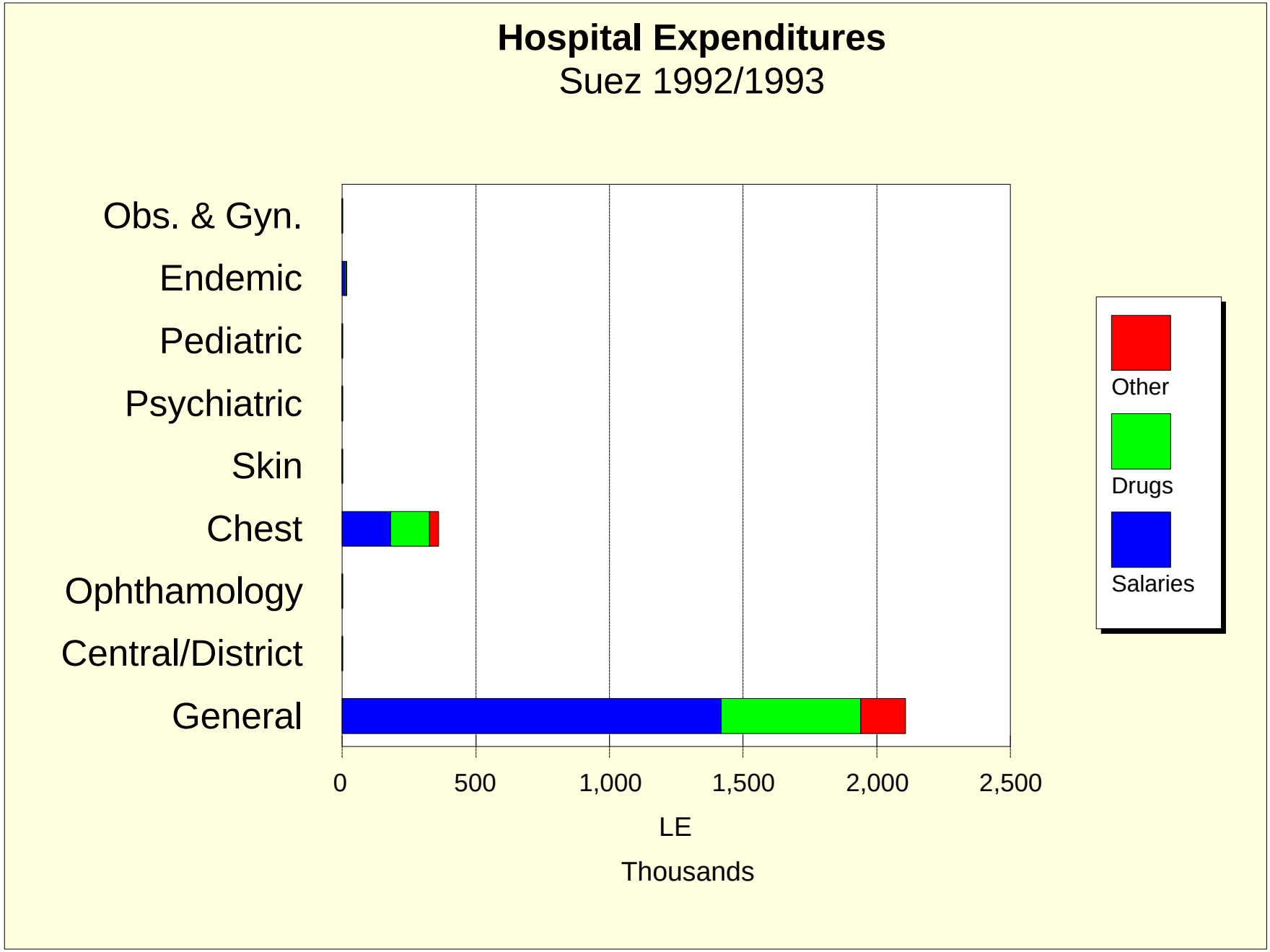
Rural Health Units, Health Groups, Urban Health Centers, Health Offices, Rural Hospitals, MCH Units

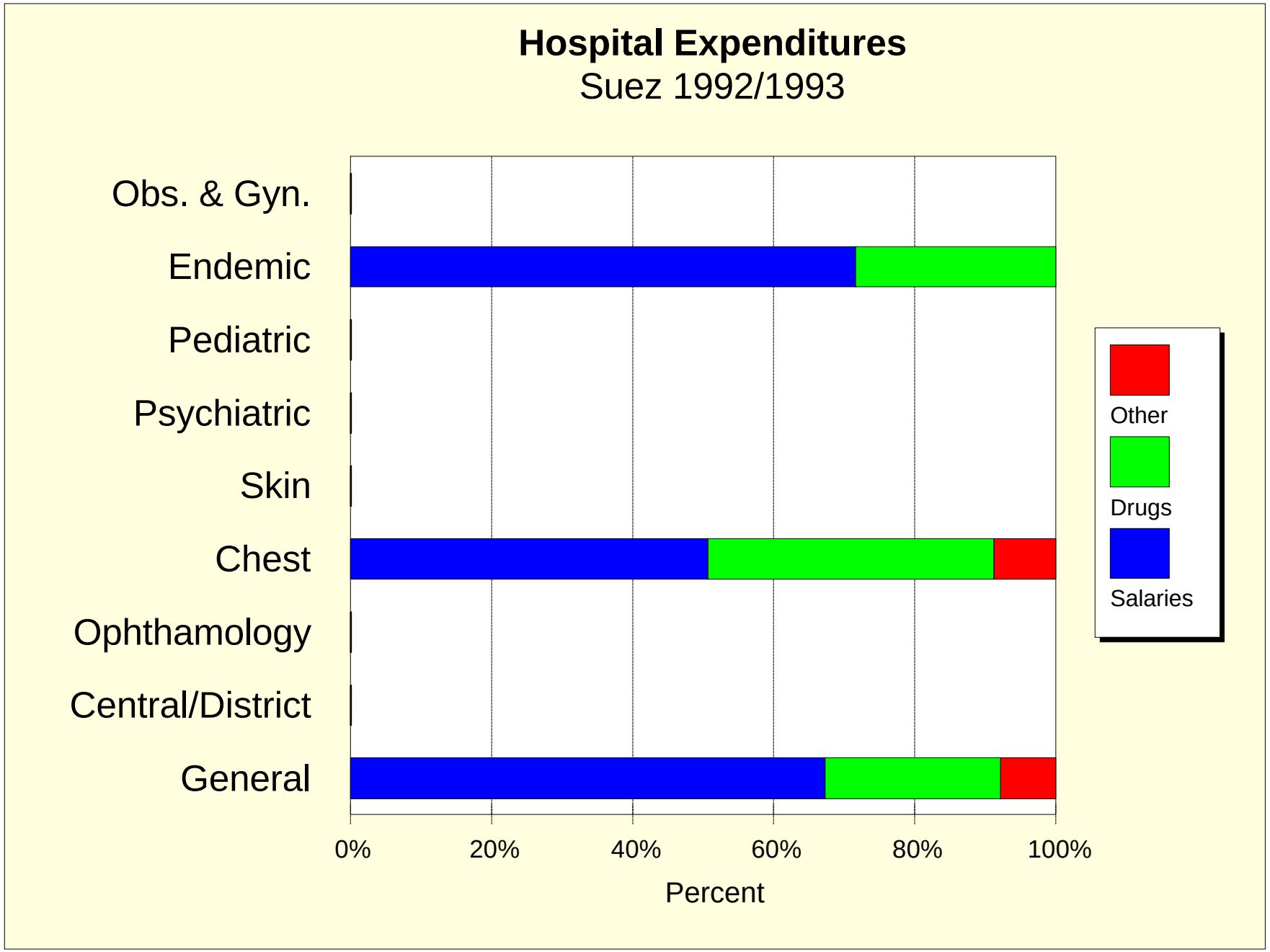
"Basic" Department

Suez 1992/1993



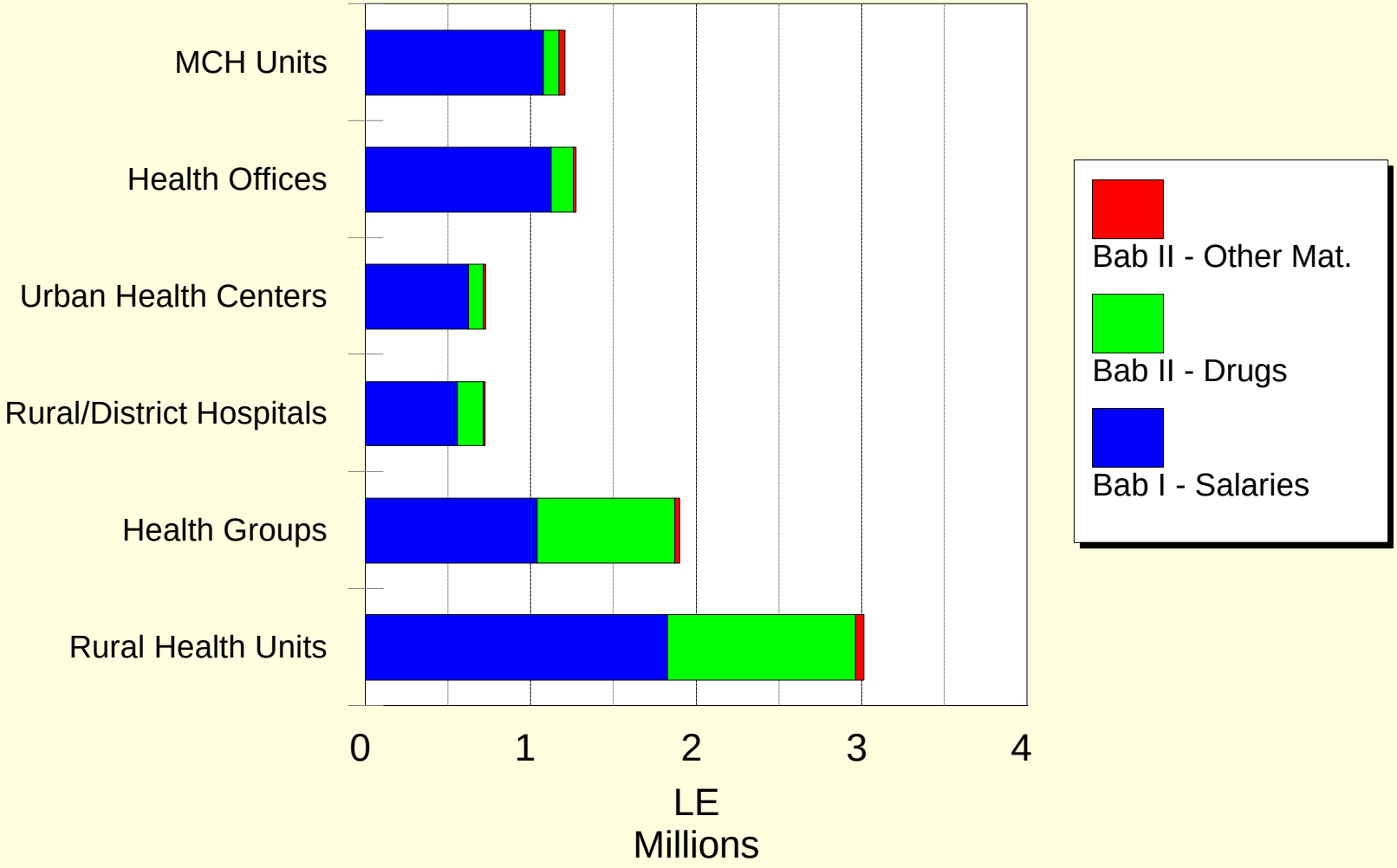
Rural Health Units, Health Groups, Urban Health Centers, Health Offices, Rural Hospitals, MCH Units


Hospital Expenditures
Suez 1992/1993
Obs. & Gyn.
Endemic
Pediatric
Psychiatric
Skin
Chest
Ophthamology
Central/District
General
0
500
1,000
1,500
2,000
2,500
LE
Thousands
Other
Drugs
Salaries


Hospital Expenditures
Suez 1992/1993
Obs. & Gyn.
Endemic
Pediatric
Psychiatric
Skin
Chest
Ophthamology
Central/District
General
0%
20%
40%
60%
80%
100%
Percent
Other
Drugs
Salaries

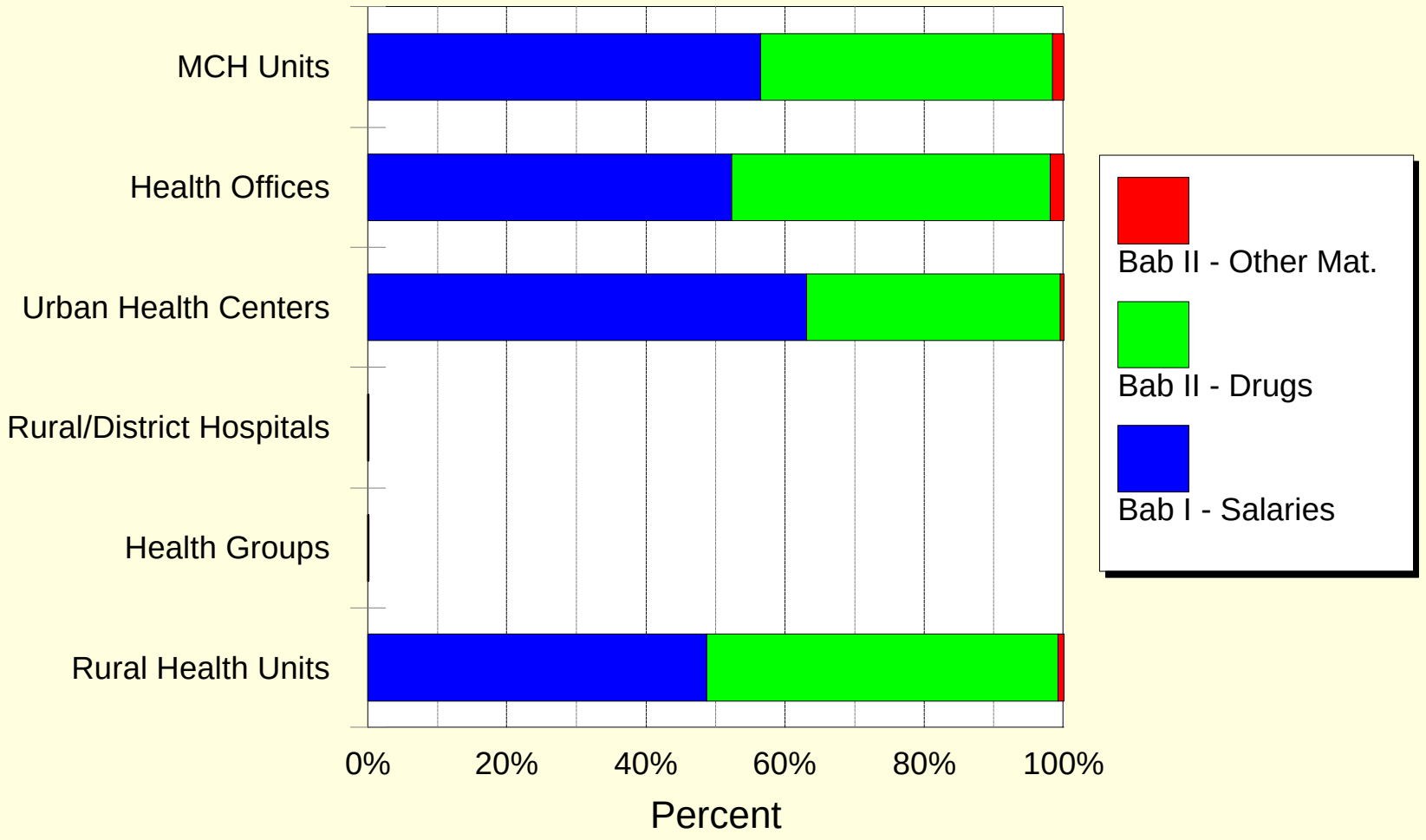
"Basic" Department

Beni Suef- 1992/1993



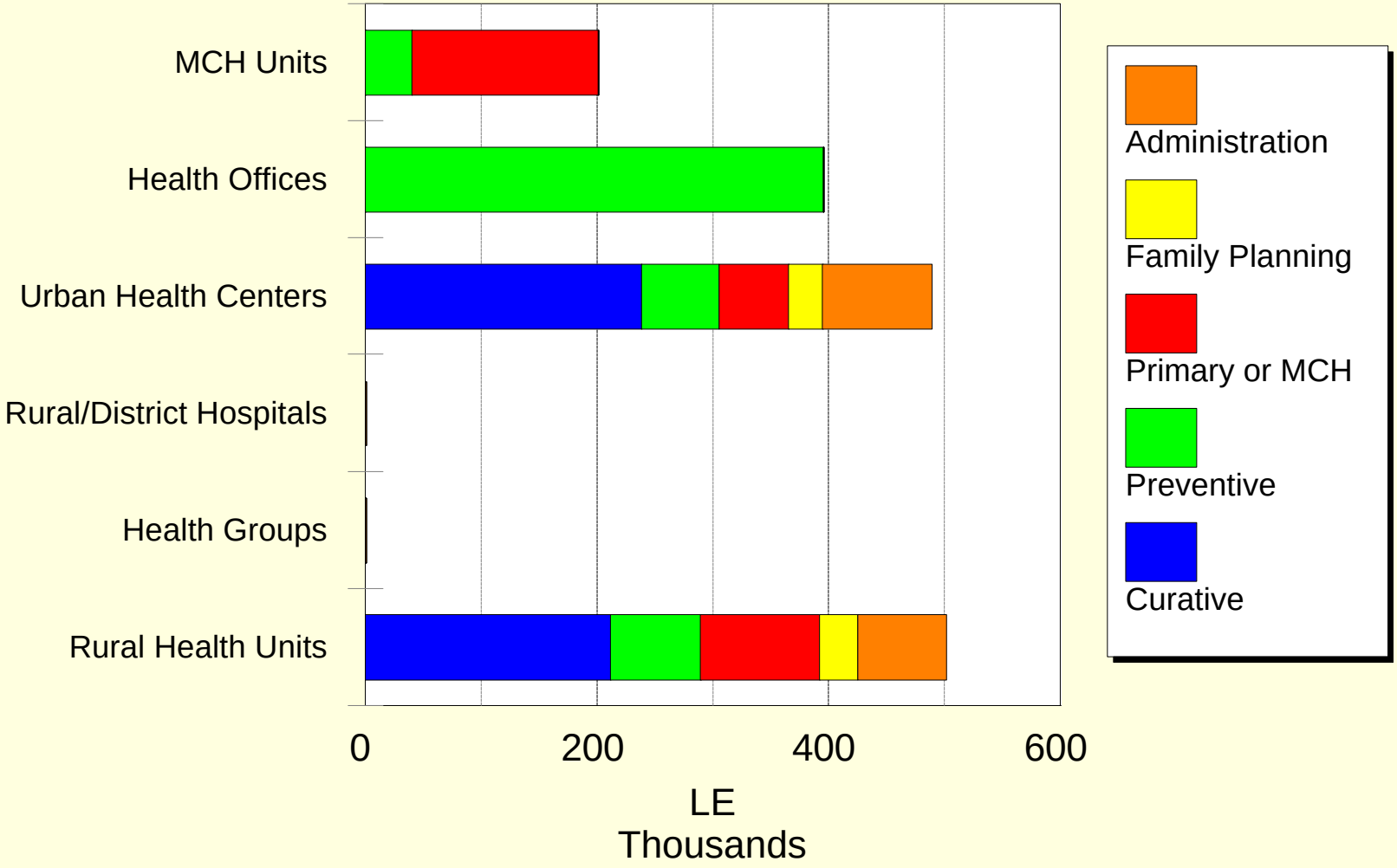
"Basic" Department

Suez - 1992/1993



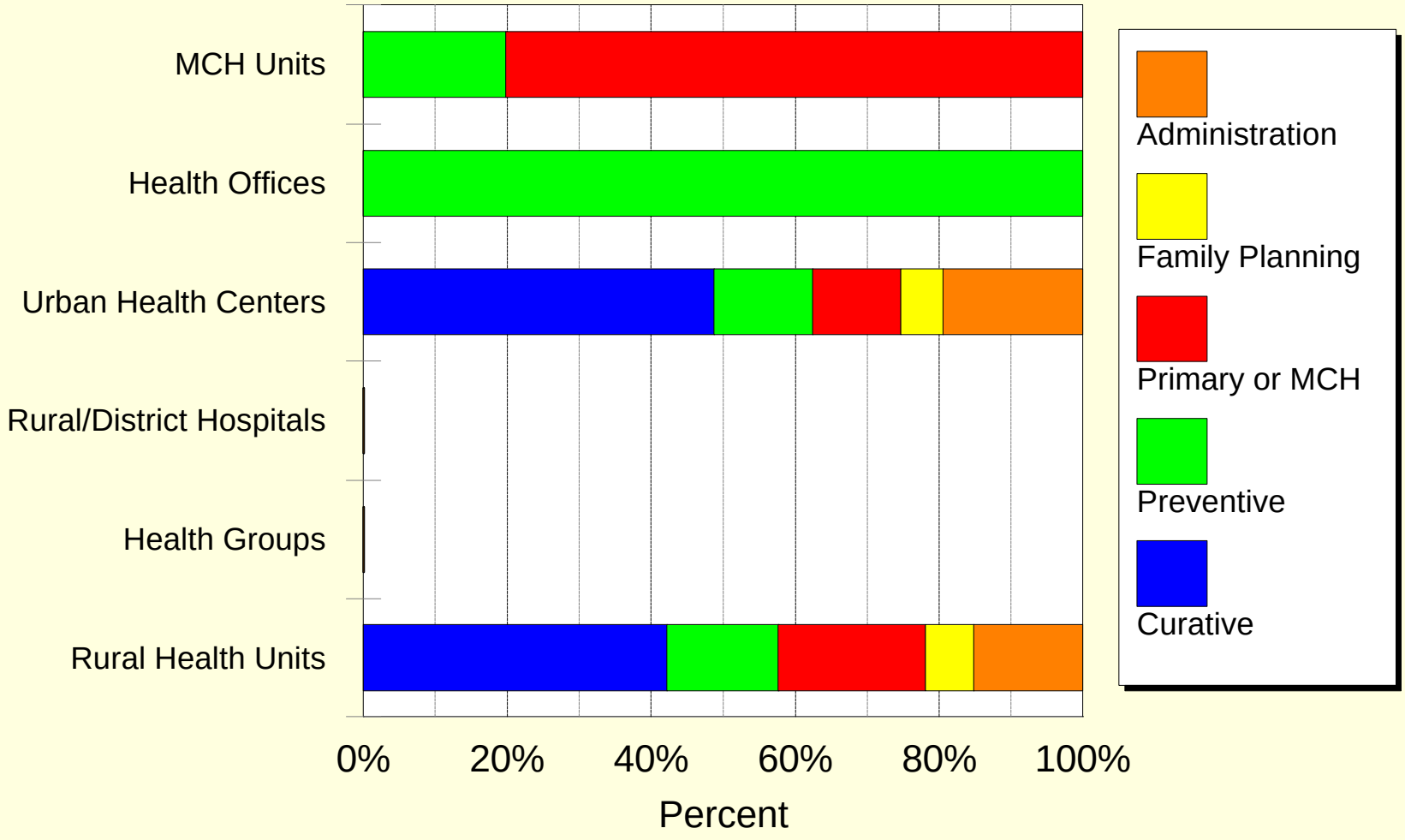
"Basic" Department

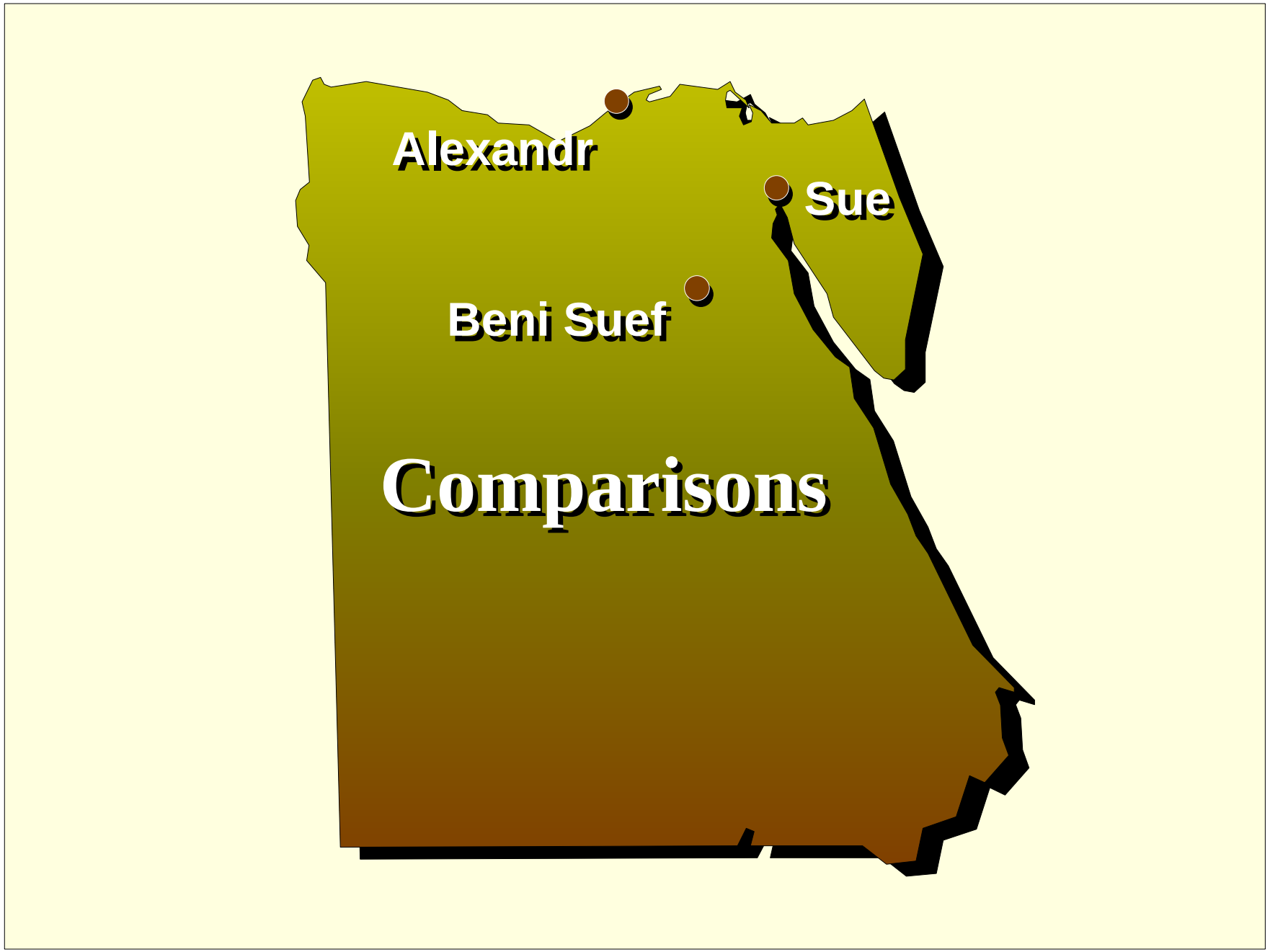
Suez - 1992/1993



"Basic" Department

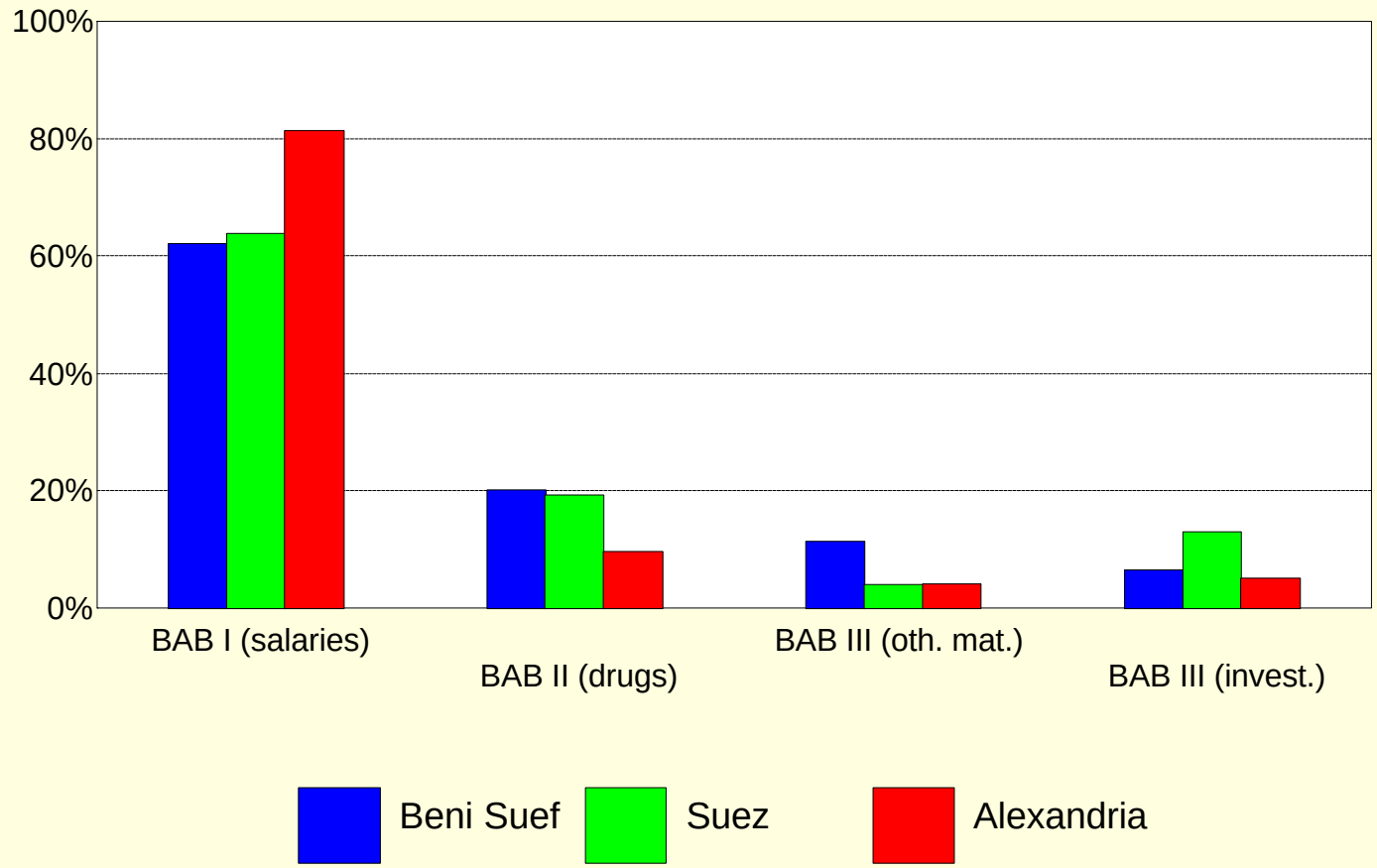
Suez - 1992/1993




Alexandr
Sue
Beni Suef
Comparisons

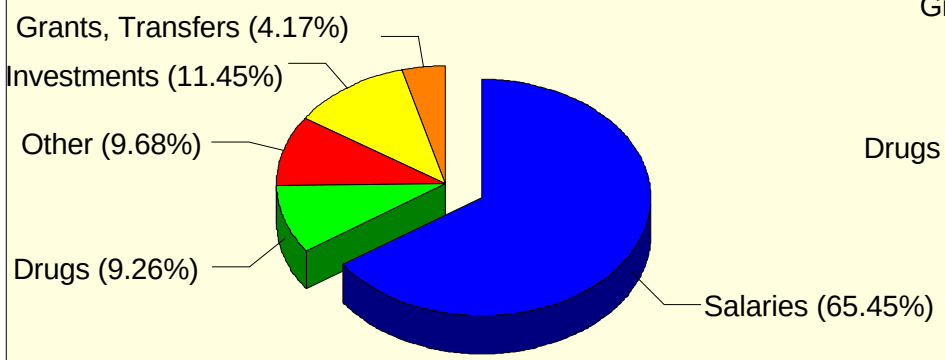
Expenditure Distribution by Bab

Phase I - Pilot Governorates

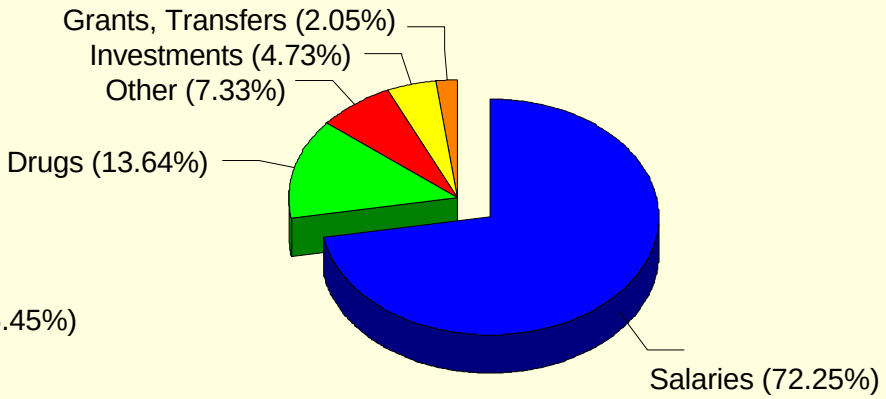


Health Expenditures by Budget Category

Alexandria



Beni Suef



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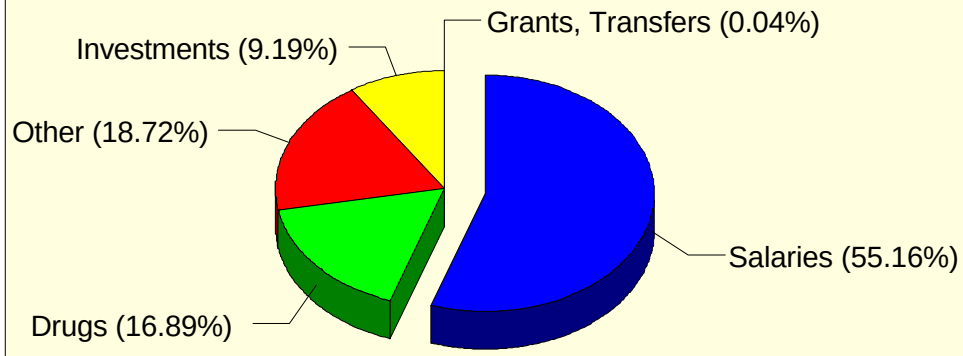
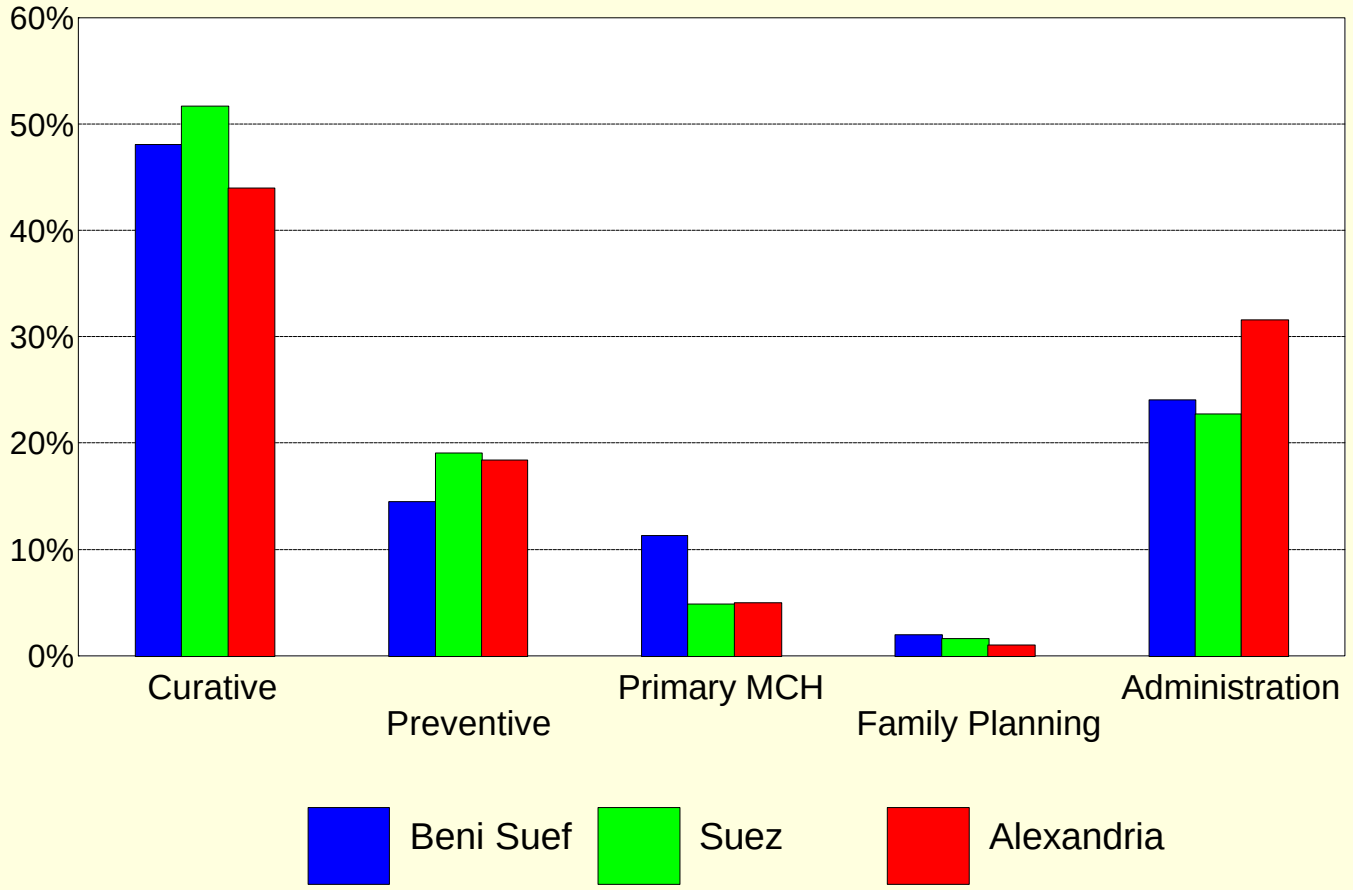


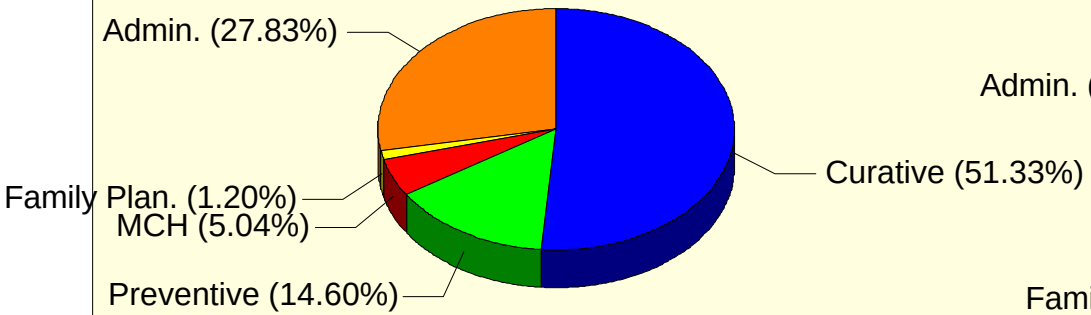
Expenditure Distribution by Function

Phase I - Pilot Governorates



Health Expenditures by Function

Alexandria



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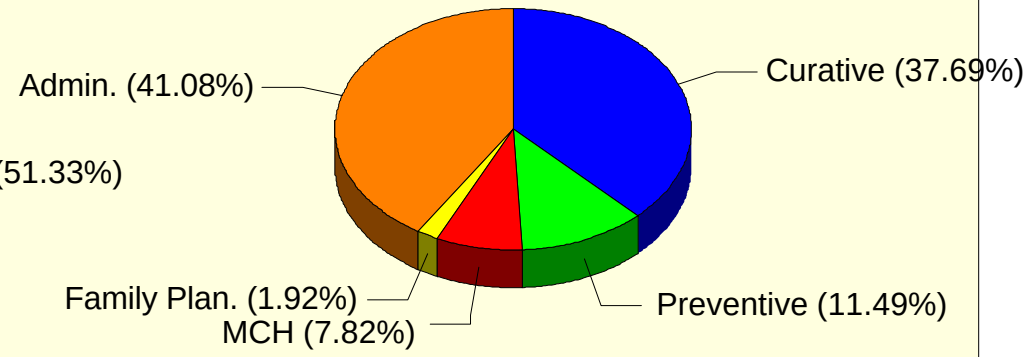

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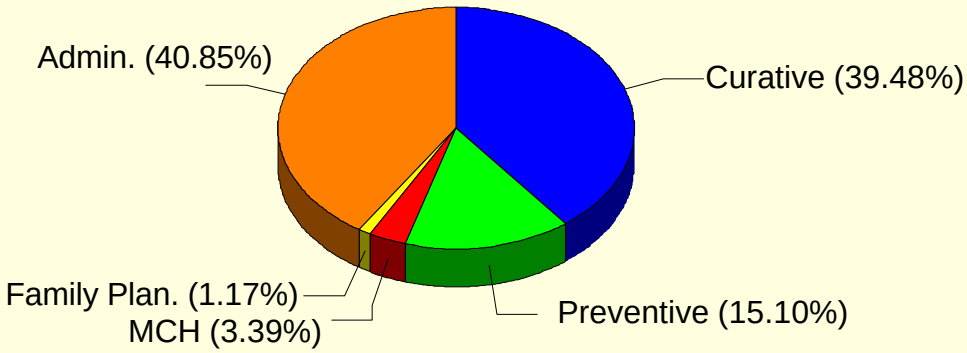
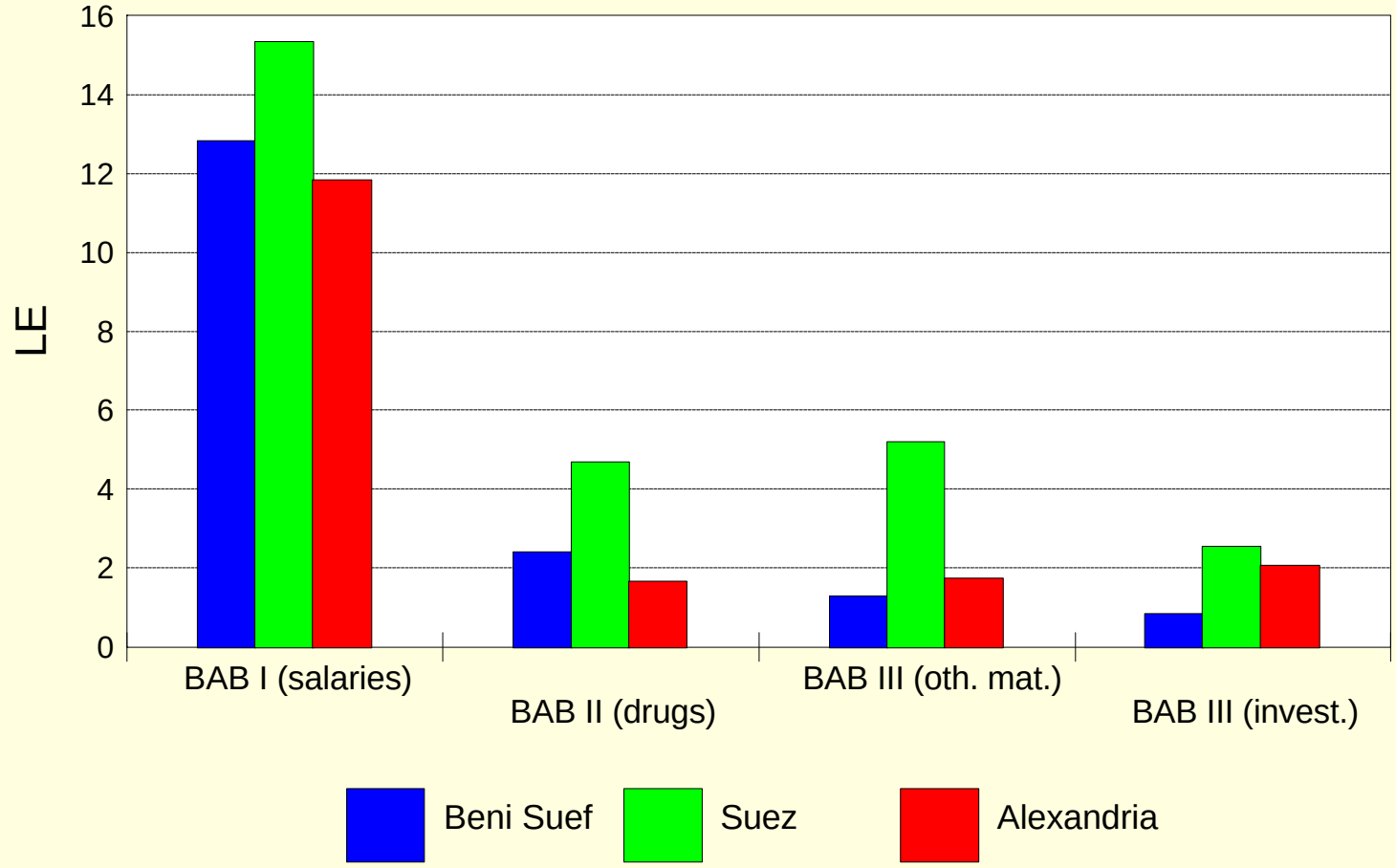


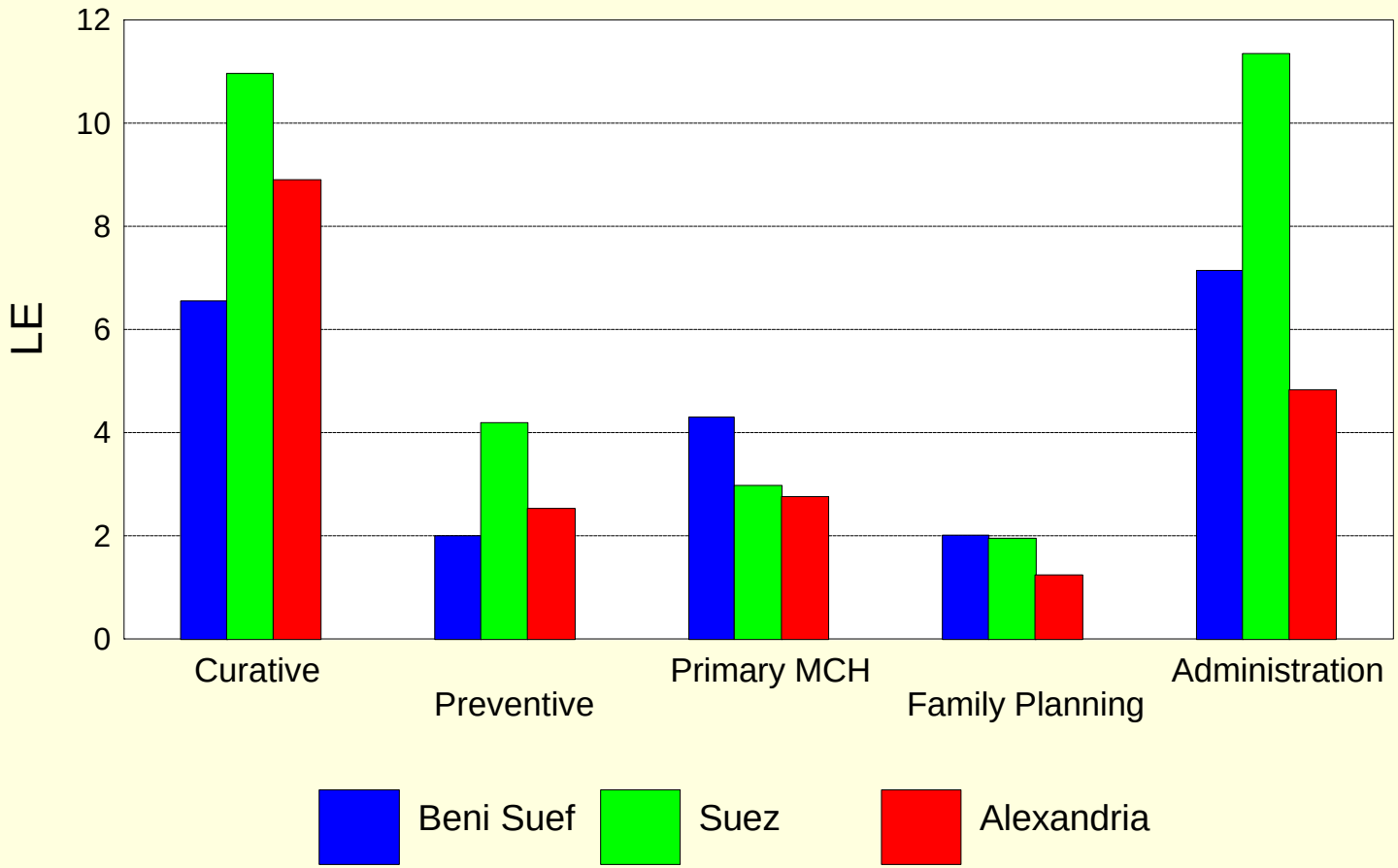
LE per Capita by Bab

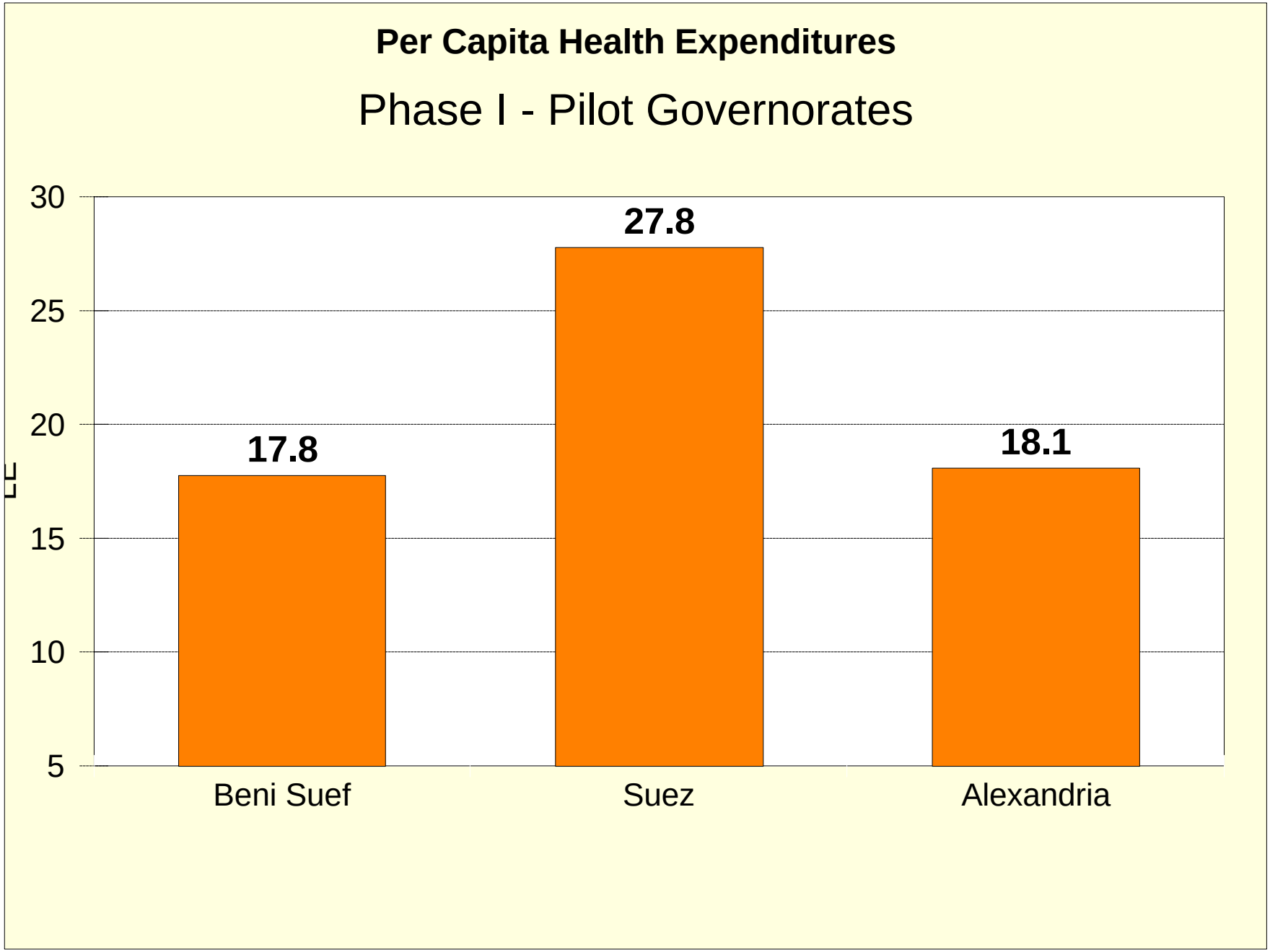
Phase I - Pilot Governorates



LE per Capita by Function

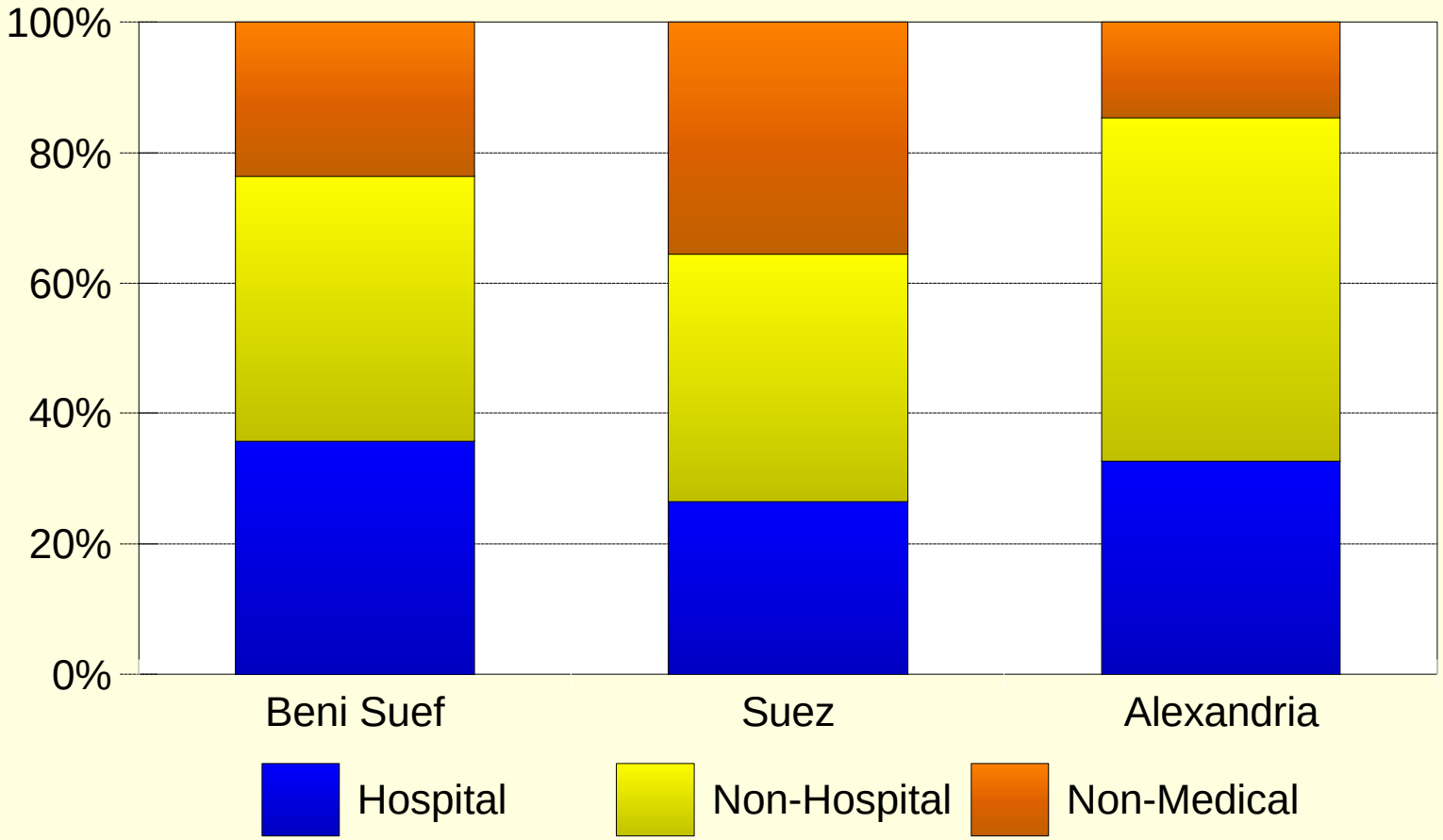
Phase I - Pilot Governorates




Per Capita Health Expenditures
Phase I - Pilot Governorates
LE
30
25
20
15
10
5
17.8
27.8
18.1
Beni Suef
Suez
Alexandria

Hospital Vs Non-Hospital

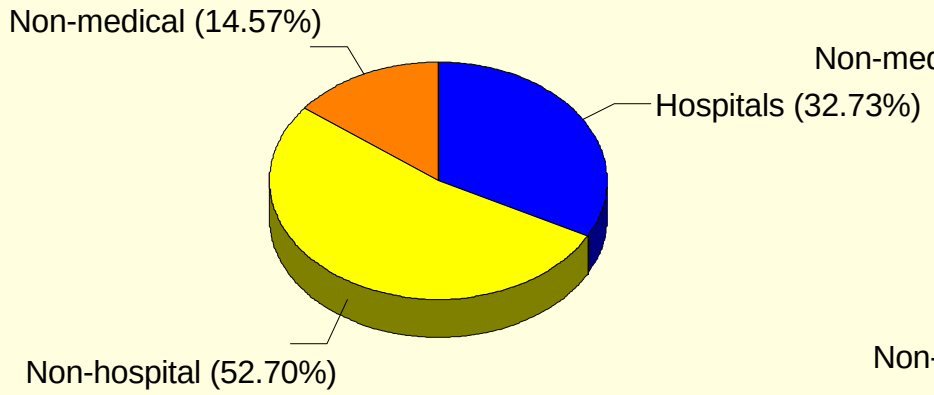
Phase I - Pilot Governorates



Hospitals include General, Central, Specialized, Fever, and Rural or District Hospitals. Non-hospital facilities include all health care units that are not classified as hospitals. Non-medical units are administrative and support units that do not directly service a medical function.

Hospital Vs Non-Hospital Expenditures

Alexandria



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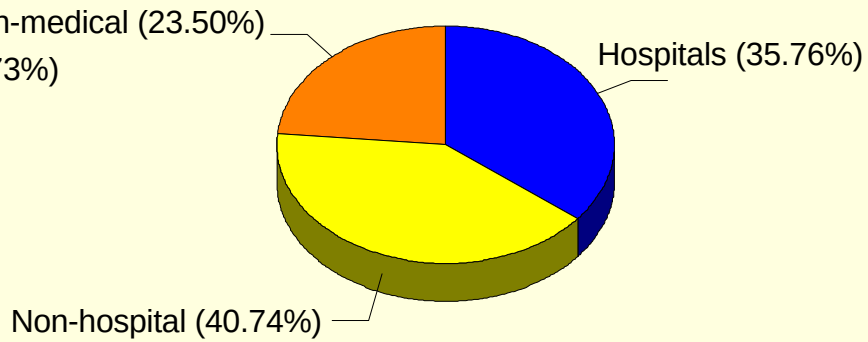

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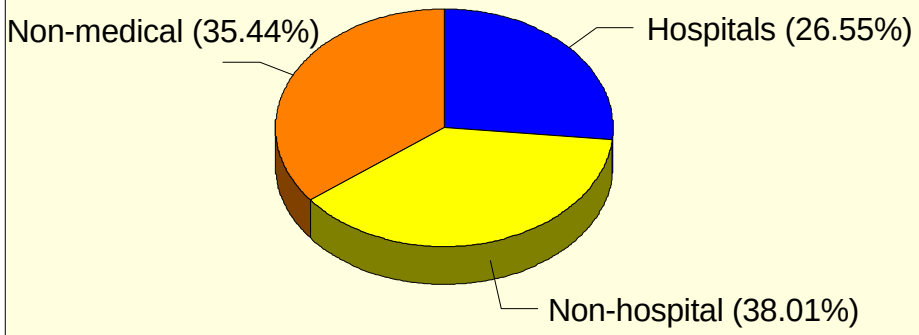

Hospitals include General, Central, Specialized, Fever, and Rural or District Hospitals. Non-hospital facilities include all health care units that are not classified as hospitals. Non-medical units are administrative and support units that do not directly service a medical function.

Annex D: Project Bibliography

Document	Title	Author
RTI 5875-001-001	Trip Report: Cairo, Egypt 7 January 1994 - 29 January 1994	Schwartz, J. B and G. M. Cressman
RTI 5875-001-002	Pilot Study: Bani Suef Governorate	G. M. Cressman and M. Abdel Latif
RTI 5875-001-003	Functional Classification of Health Services	G. M. Cressman and M. Abdel Latif
RTI 5875-001-004	Trip Report: Cairo, Egypt 5 June 1994 - 24 June 1994	G. M. Cressman and O. Wolowyna
RTI 5875-001-005	Trip Report: Cairo, Egypt 24 August 1994 - 31 August 1994	G. M. Cressman
RTI 5875-001-006	Trip Report: Cairo, Egypt 7 December 1995 - 19 December 1995	G. M. Cressman
RTI 5875-001-007	Trip Report: Cairo, Egypt 16 March 1995 - 29 March 1995	G. M. Cressman
RTI 5875-001-00?	Trip Report: Boston MA, Washington D.C. 12 January 1995 - 13 January 1995	G. M. Cressman
RTI 5875-001-008	Trip Report: Cairo, Egypt 6 June 1995 - 20 June 1995	G. M. Cressman
RTI 5875-001-009	Workshop Proceedings: First Health Budget Tracking System Workshop	G. M. Cressman, M. Abdel Latif, O. Wolowyna
RTI 5875-001-010	Phase I: Final Report	Cressman, G.M. and M. Abdel Latif
RTI 5875-001-011	Phase I: Results	Cressman, G.M. and M. Abdel Latif